09993845.111501

Product Development Overview

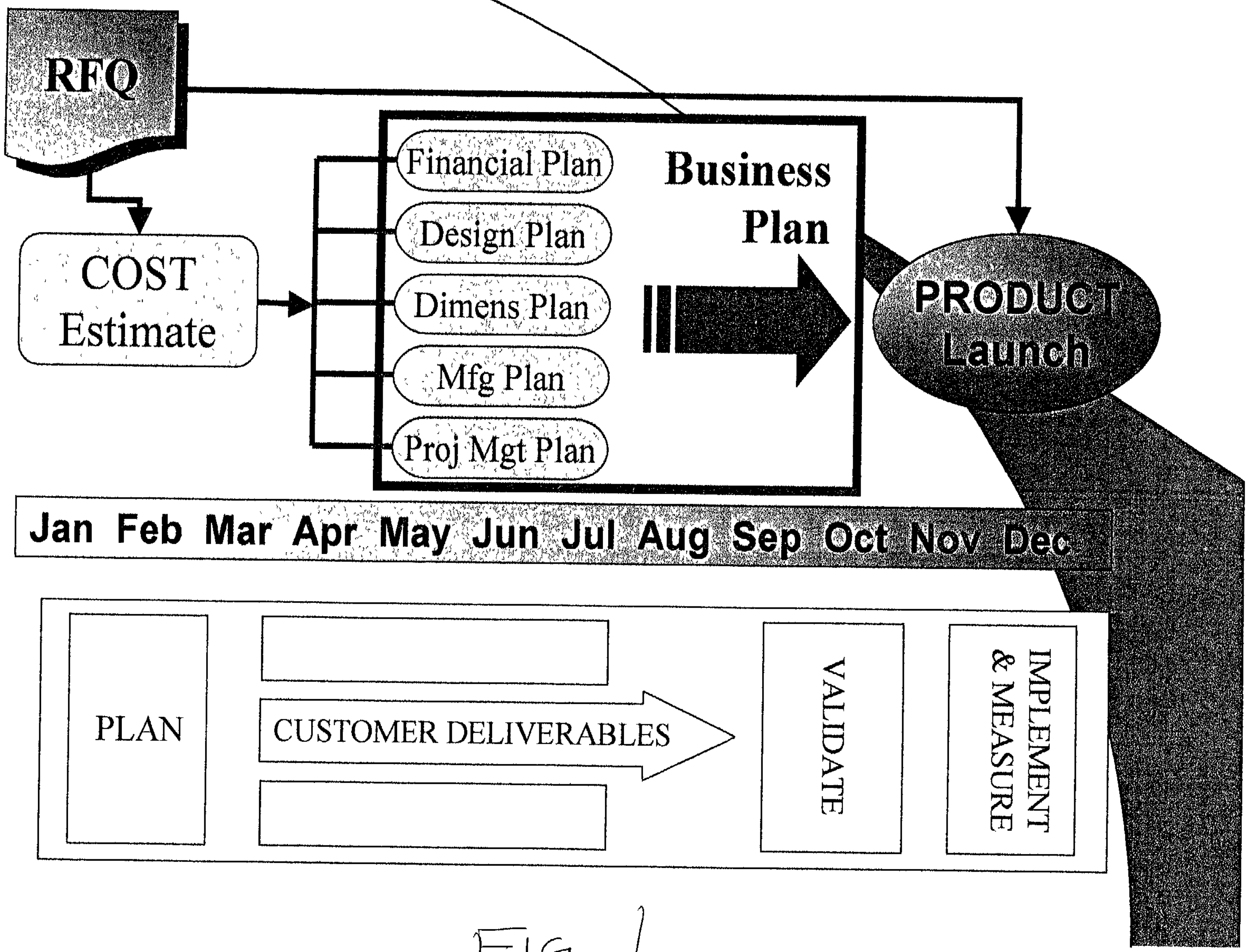


Fig 1

RFQ Workflow Process

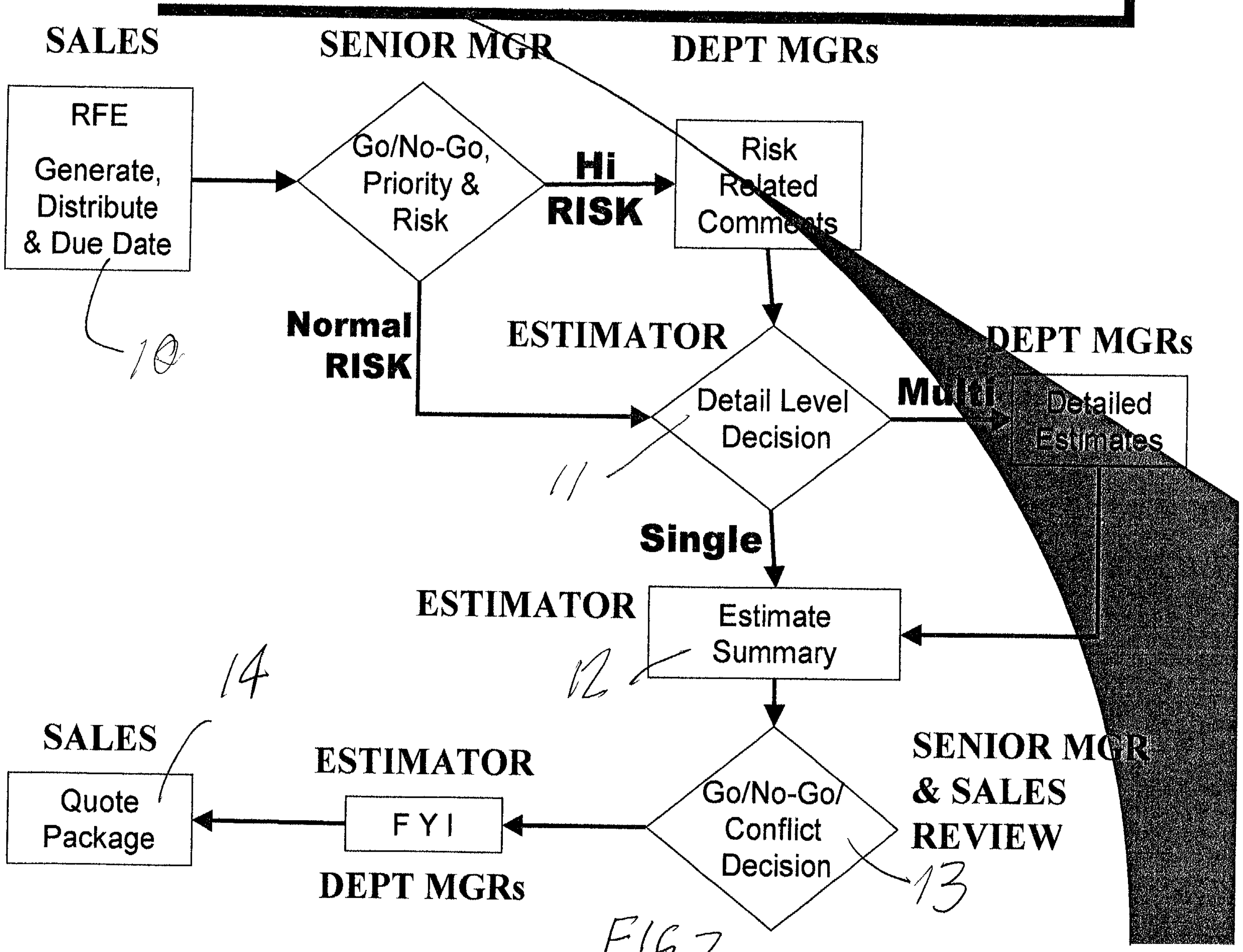
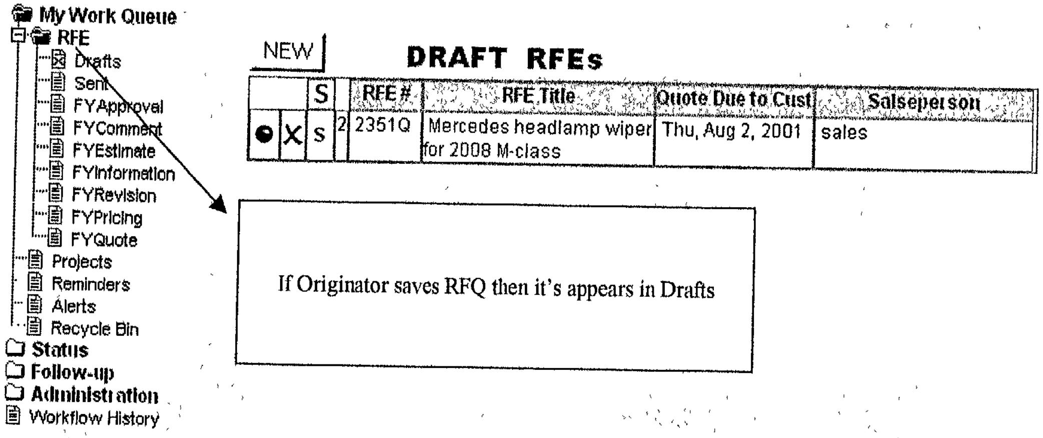


FIG 2

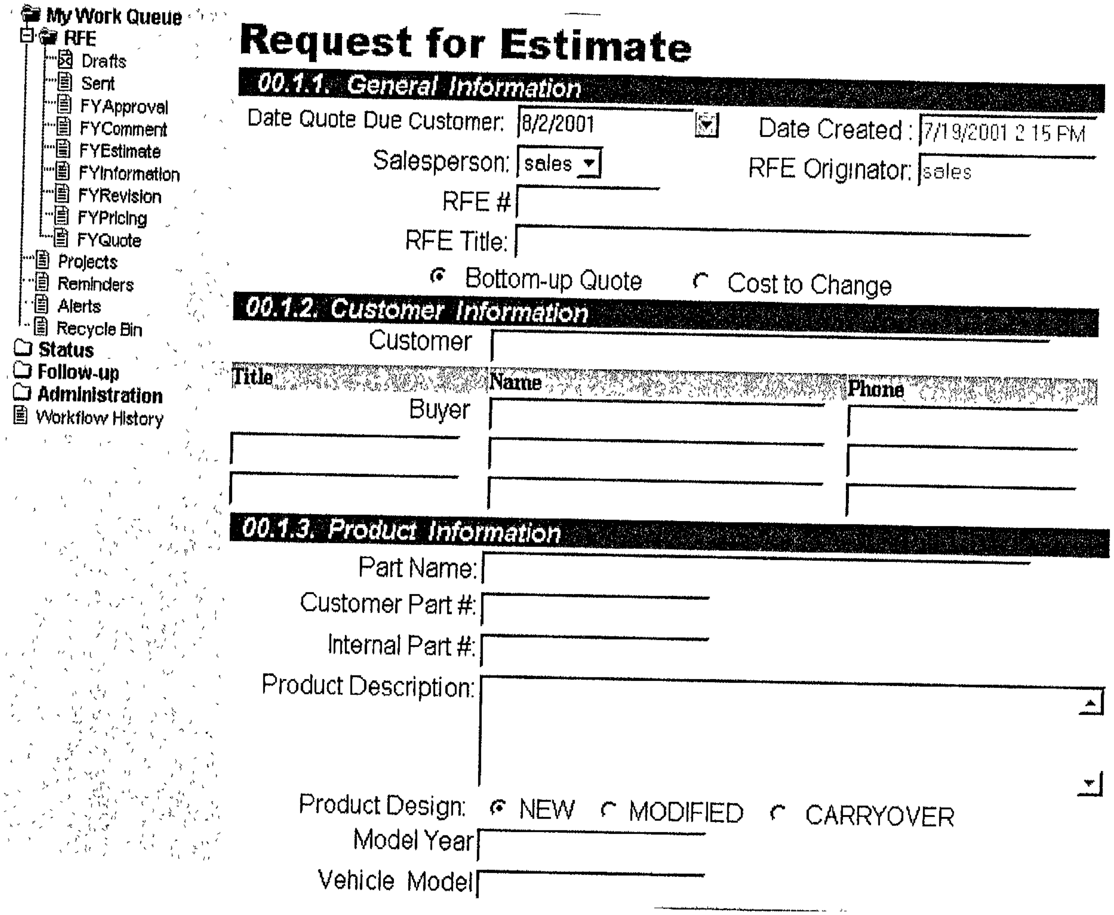


DRAFT RFEs

		S		RFE #	RFE Title	Quote Due to Cust	Salseperson
●	X	s	2	2351Q	Mercedes headlamp wiper for 2008 M-class	Thu, Aug 2, 2001	sales

If Originator saves RFQ then it's appears in Drafts

FIG 3



Request for Estimate

00.1.1. General Information

Date Quote Due Customer: 8/2/2001

Date Created : 7/19/2001 2 15 PM

Salesperson: sales

RFE Originator: sales

RFE #

RFE Title:

● Bottom-up Quote ○ Cost to Change

00.1.2. Customer Information

Customer

Title	Name	Phone
Buyer		

00.1.3. Product Information

Part Name:

Customer Part #:

Internal Part #:

Product Description:

Product Design: ● NEW ○ MODIFIED ○ CARRYOVER

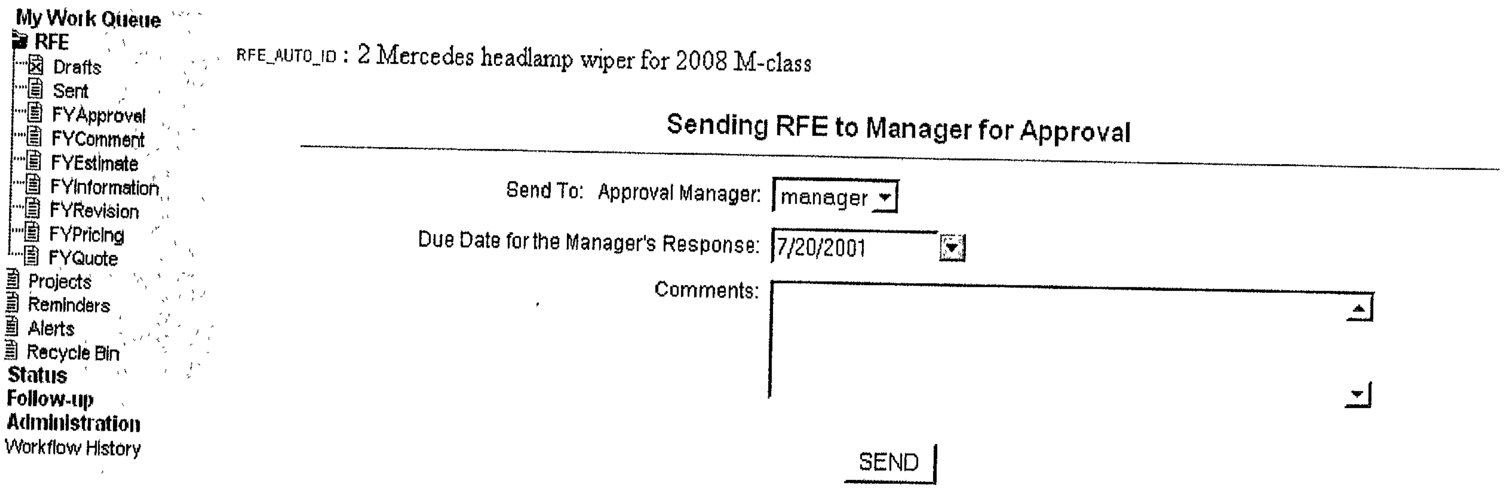
Model Year

Vehicle Model

After filling up this form Originator Can Save this RFQ as Draft or Send to a manager for his decision on RFQ.

FIG 4

0992845.111601



My Work Queue
RFE
Drafts
Sent
FYApproval
FYComment
FYEstimate
FYInformation
FYRevision
FYPricing
FYQuote
Projects
Reminders
Alerts
Recycle Bin
Status
Follow-up
Administration
Workflow History

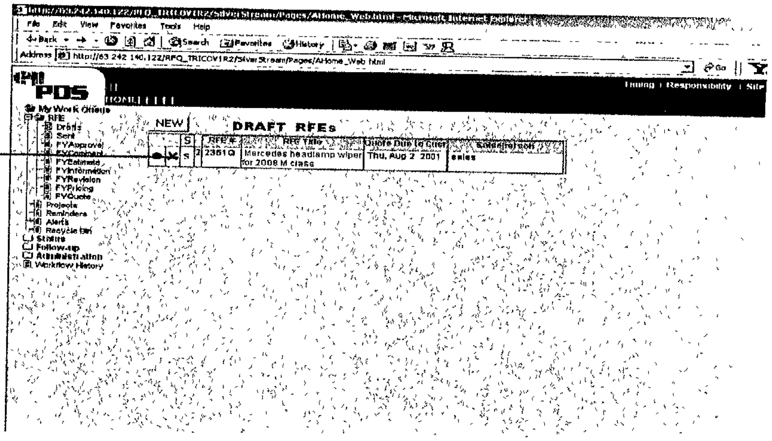
RFE_AUTO_ID : 2 Mercedes headlamp wiper for 2008 M-class

Sending RFE to Manager for Approval

Send To: Approval Manager: manager

Due Date for the Manager's Response: 7/20/2001

Comments:

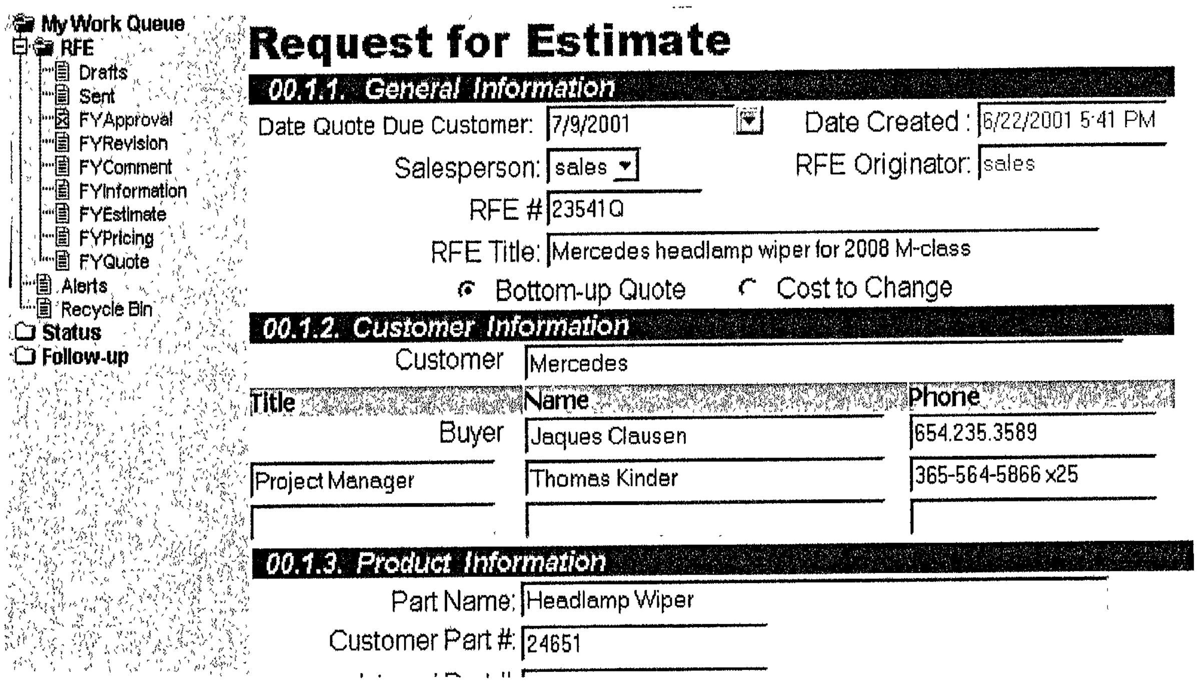


DRAFT RFEs

		S		RFE #	RFE Title	Quote Due to Cust	Salesperson
		S	2	2361Q	Mercedes headlamp wiper for 2008 M class	Thu, Aug 2 2001	sales

Click on 'S' to send this RFE to Manager for Approval. This opens current window

Fig 5



Request for Estimate

00.1.1. General Information

Date Quote Due Customer: 7/9/2001

Date Created : 6/22/2001 5:41 PM

Salesperson: sales

RFE Originator: sales

RFE # 23541Q

RFE Title: Mercedes headlamp wiper for 2008 M-class

● Bottom-up Quote ○ Cost to Change

00.1.2. Customer Information

Customer: Mercedes

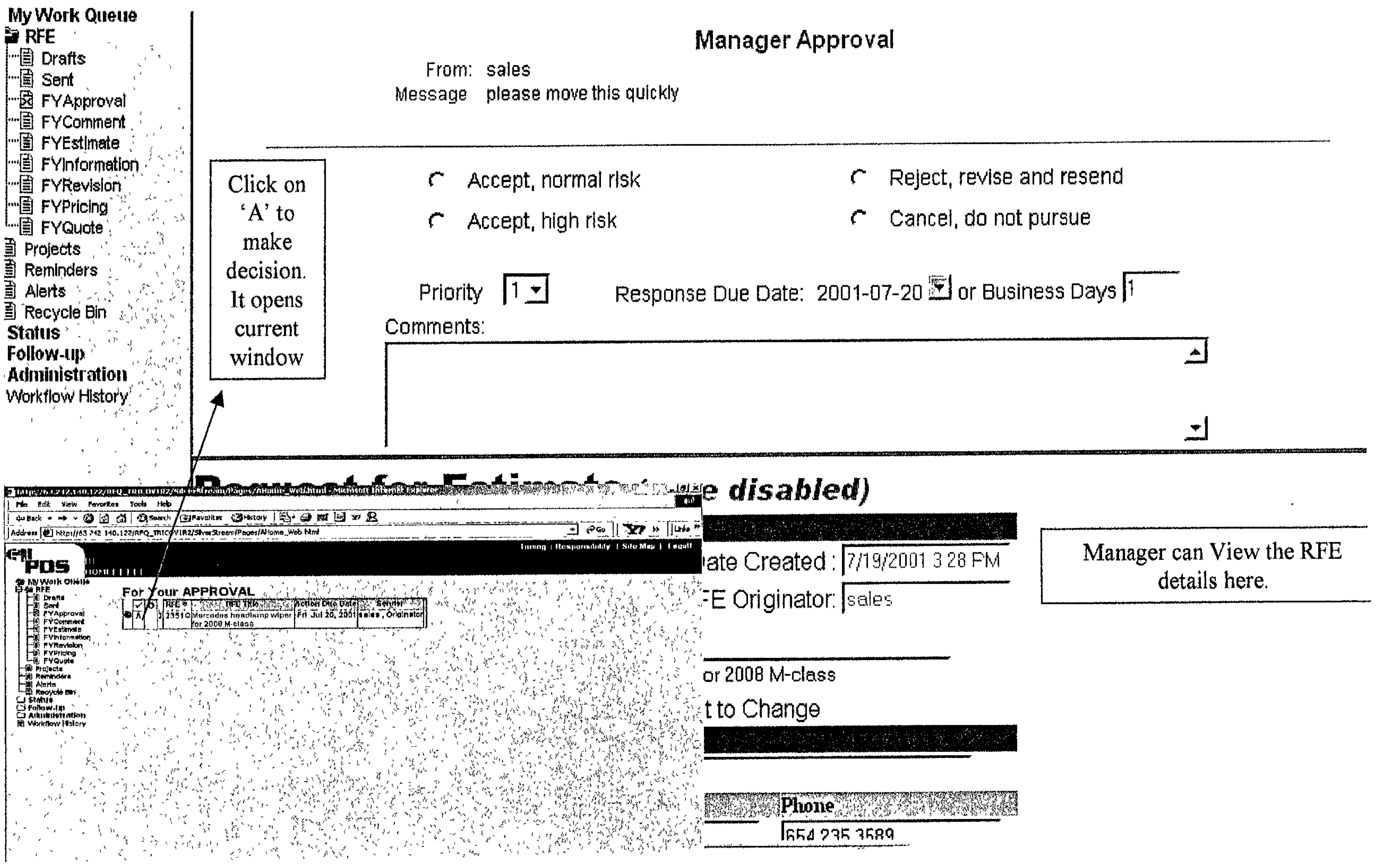
Title	Name	Phone
Buyer	Jaques Clausen	654.235.3589
Project Manager	Thomas Kinder	365-564-5866 x25

00.1.3. Product Information

Part Name: Headlamp Wiper

Customer Part #: 24651

FIG 6



My Work Queue
- RFE
  - Drafts
  - Sent
  - FYApproval
  - FYComment
  - FYEstimate
  - FYInformation
  - FYRevision
  - FYPricing
  - FYQuote
- Projects
- Reminders
- Alerts
- Recycle Bin
- **Status**
- **Follow-up**
- **Administration**
- Workflow History

Manager Approval

From: sales
Message please move this quickly

○ Accept, normal risk ○ Reject, revise and resend
○ Accept, high risk ○ Cancel, do not pursue

Priority 1 Response Due Date: 2001-07-20 or Business Days 1

Comments:

Click on 'A' to make decision. It opens current window

e disabled)

ate Created : 7/19/2001 3 28 PM

E Originator: sales

or 2008 M-class

t to Change

Phone

654 235 3589

Manager can View the RFE details here.

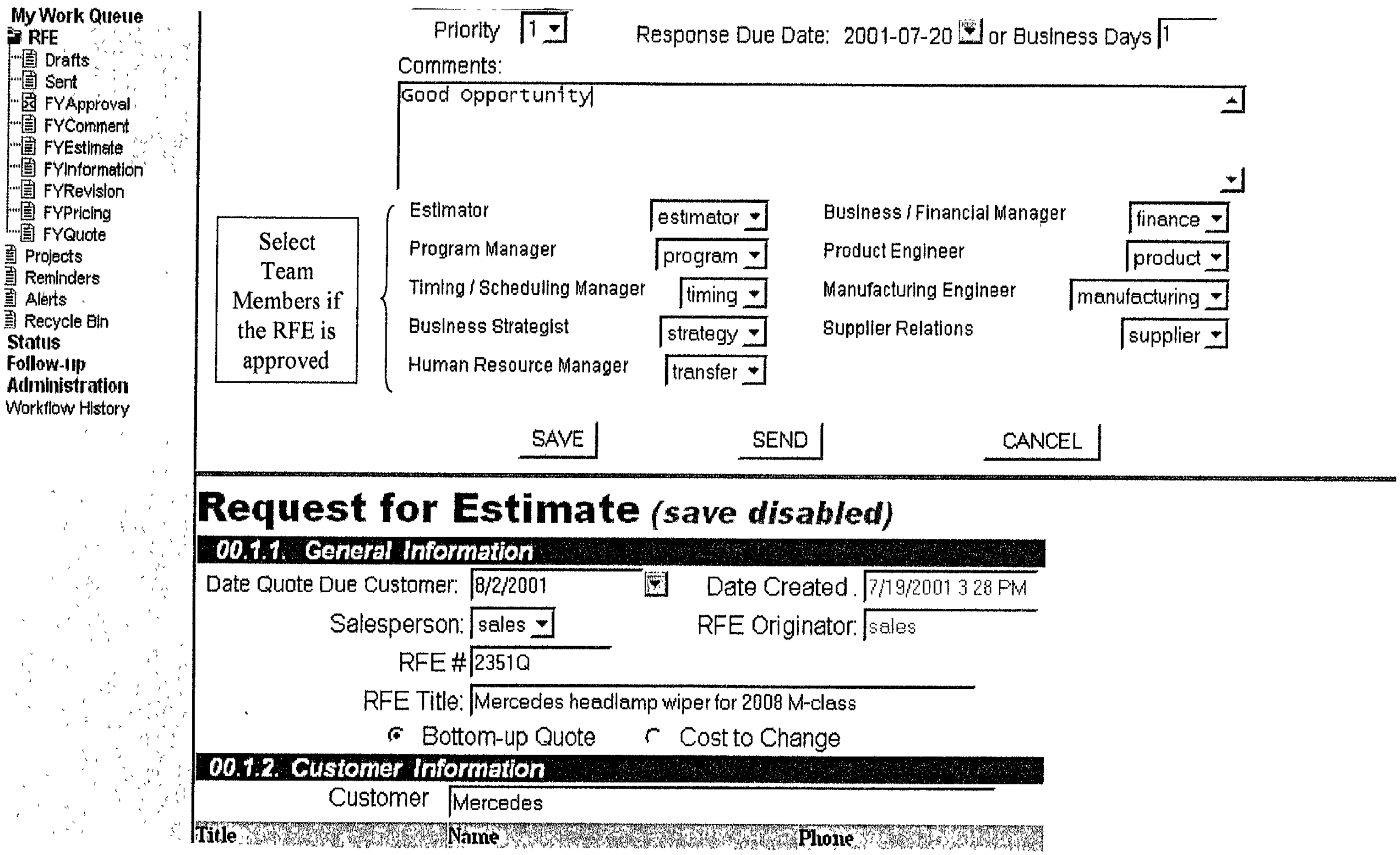
http://63.242.140.122/RFQ_TRICOV1R2/SilverStream/Pages/AHome_Web.html - Microsoft Internet Explorer

Address http://63.242.140.122/RFQ_TRICOV1R2/SilverStream/Pages/AHome_Web.html

For Your APPROVAL

☑		RFE #	RFE Title	Action Due Date	Sender
A		2351	Mercedes headlamp wiper for 2008 M-class	Fri Jul 20, 2001	sales , Originator

FIG 7



Priority: 1

Response Due Date: 2001-07-20 or Business Days: 1

Comments: Good opportunity

Select Team Members if the RFE is approved

Estimator: estimator

Program Manager: program

Timing / Scheduling Manager: timing

Business Strategist: strategy

Human Resource Manager: transfer

Business / Financial Manager: finance

Product Engineer: product

Manufacturing Engineer: manufacturing

Supplier Relations: supplier

Request for Estimate ***(save disabled)***

00.1.1. General Information

Date Quote Due Customer: 8/2/2001

Date Created: 7/19/2001 3 28 PM

Salesperson: sales

RFE Originator: sales

RFE #: 2351Q

RFE Title: Mercedes headlamp wiper for 2008 M-class

● Bottom-up Quote ○ Cost to Change

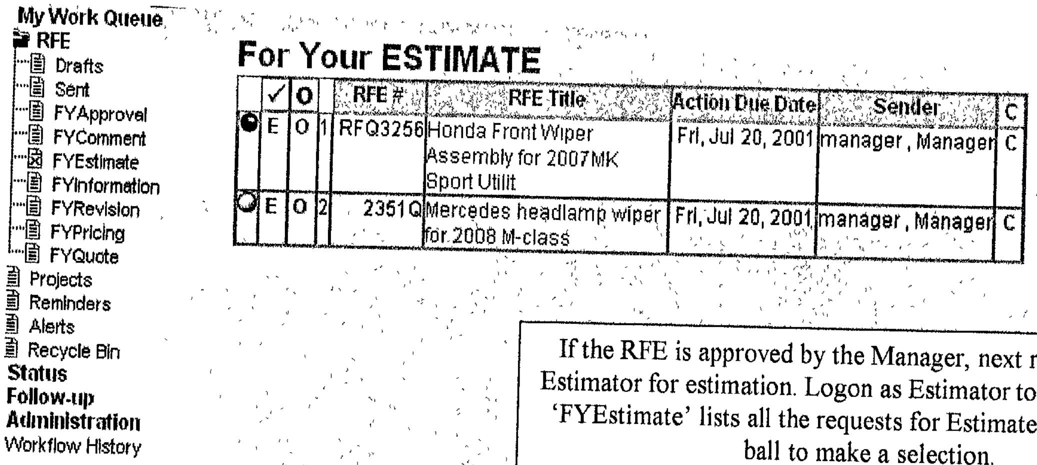
00.1.2. Customer Information

Customer: Mercedes

Title	Name	Phone

FIG 8

09993845 .111501



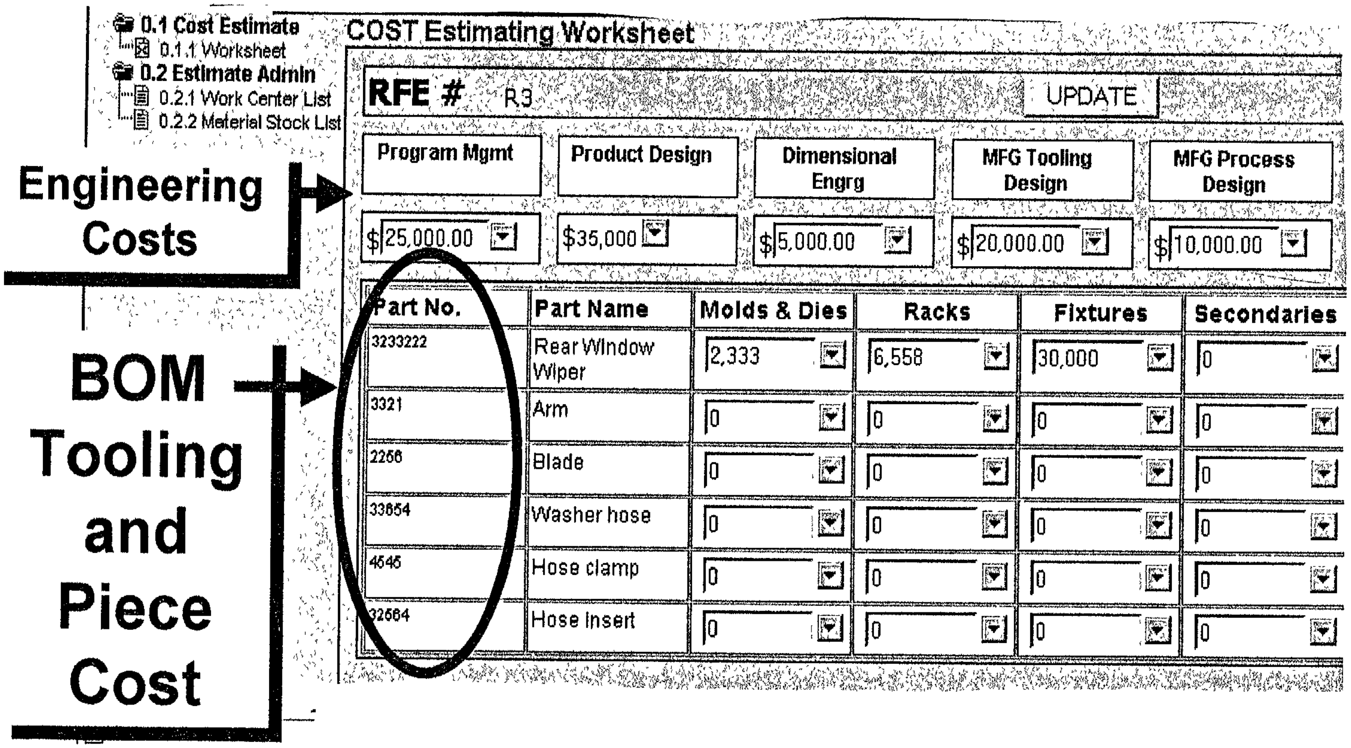
For Your ESTIMATE

	✓	O		RFE #	RFE Title	Action Due Date	Sender	C
●	E	O	1	RFQ3256	Honda Front Wiper Assembly for 2007MK Sport Utilit	Fri, Jul 20, 2001	manager , Manager	C
○	E	O	2	2351Q	Mercedes headlamp wiper for 2008 M-class	Fri, Jul 20, 2001	manager , Manager	C

If the RFE is approved by the Manager, next request goes to Estimator for estimation. Logon as Estimator to see the request. 'FYEstimate' lists all the requests for Estimate. Click on blue ball to make a selection.

FIG 9

Estimate Program Costs – Level 1



COST Estimating Worksheet

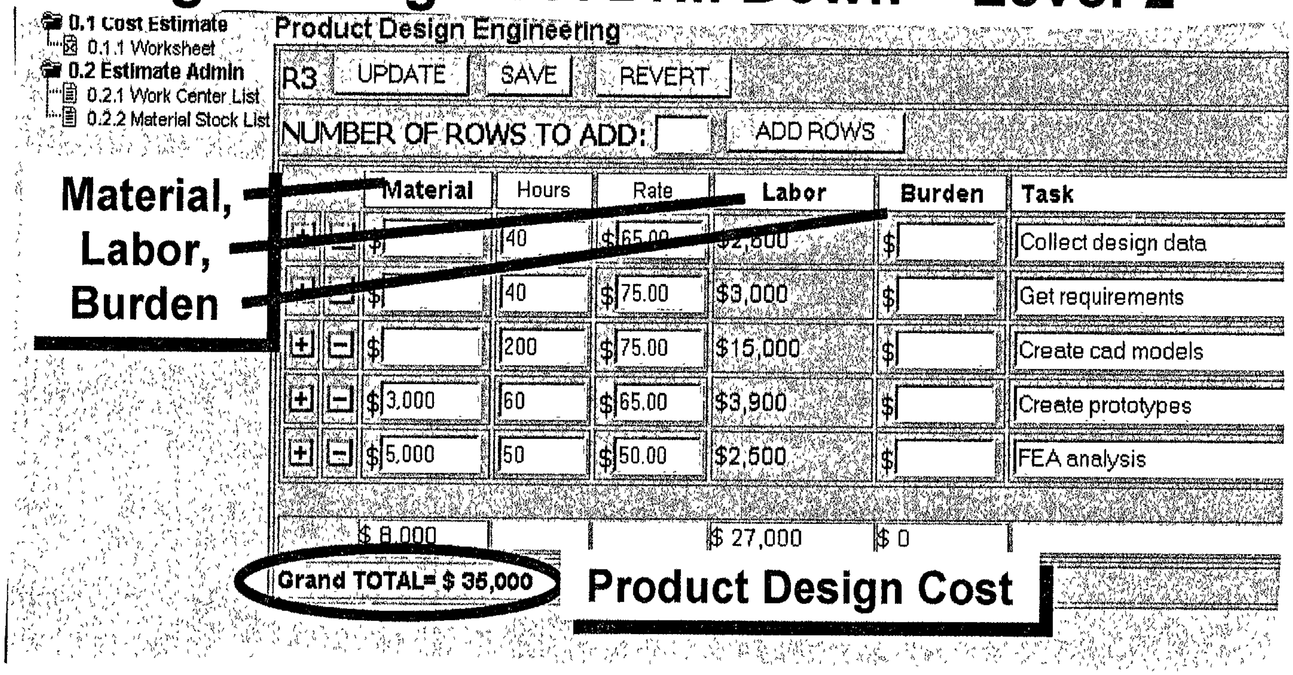
RFE # R3

Program Mgmt	Product Design	Dimensional Engrg	MFG Tooling Design	MFG Process Design
$25,000.00	$35,000	$5,000.00	$20,000.00	$10,000.00

Part No.	Part Name	Molds & Dies	Racks	Fixtures	Secondaries
3233222	Rear Window Wiper	2,333	6,558	30,000	0
3321	Arm	0	0	0	0
2266	Blade	0	0	0	0
33654	Washer hose	0	0	0	0
4545	Hose clamp	0	0	0	0
32664	Hose Insert	0	0	0	0

FIG 10

Engineering Cost Drill Down – Level 2

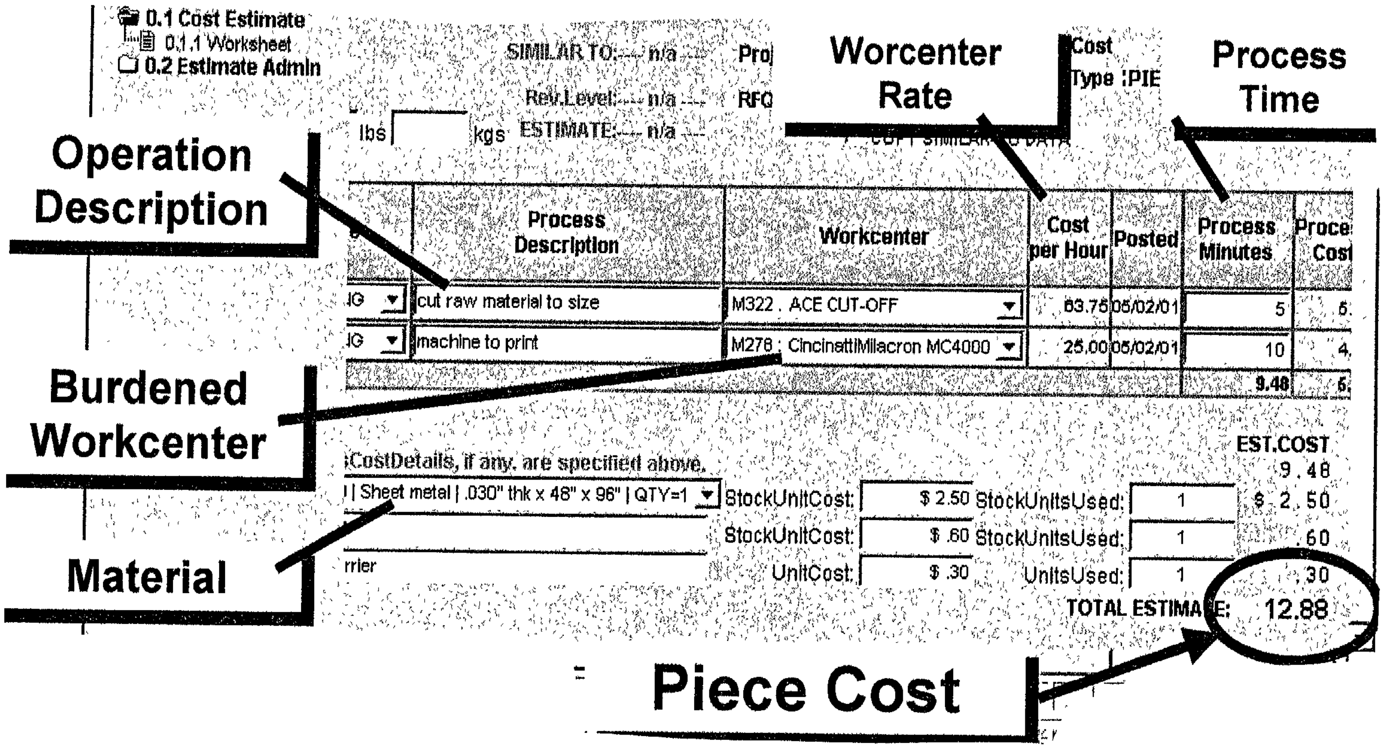


		Material	Hours	Rate	Labor	Burden	Task
+	−	$	40	$ 65.00	$2,600	$	Collect design data
+	−	$	40	$ 75.00	$3,000	$	Get requirements
+	−	$	200	$ 75.00	$15,000	$	Create cad models
+	−	$ 3,000	60	$ 65.00	$3,900	$	Create prototypes
+	−	$ 5,000	50	$ 50.00	$2,500	$	FEA analysis
		$ 8,000			$ 27,000	$ 0	

Grand TOTAL= $ 35,000

FIG 11

Piece Cost Drill Down – Level 2



SIMILAR TO:--- n/a --- Proj

Rev.Level:--- n/a --- RFQ

lbs kgs ESTIMATE:--- n/a ---

Cost Type :PIE

	Process Description	Workcenter	Cost per Hour	Posted	Process Minutes	Proce Cost
IG	cut raw material to size	M322 . ACE CUT-OFF	63.75	05/02/01	5	5.
IG	machine to print	M278 : CincinattiMilacron MC4000	25.00	05/02/01	10	4.
					9.48	5.

CostDetails, if any, are specified above.

				EST.COST	
				9.48	
I | Sheet metal | .030" thk x 48" x 96" | QTY=1	StockUnitCost:	$ 2.50	StockUnitsUsed:	1	$ 2.50
	StockUnitCost:	$ .60	StockUnitsUsed:	1	.60
rrier	UnitCost:	$ .30	UnitsUsed:	1	.30
			TOTAL ESTIMATE:		12.88

Operation Description

Burdened Workcenter

Material

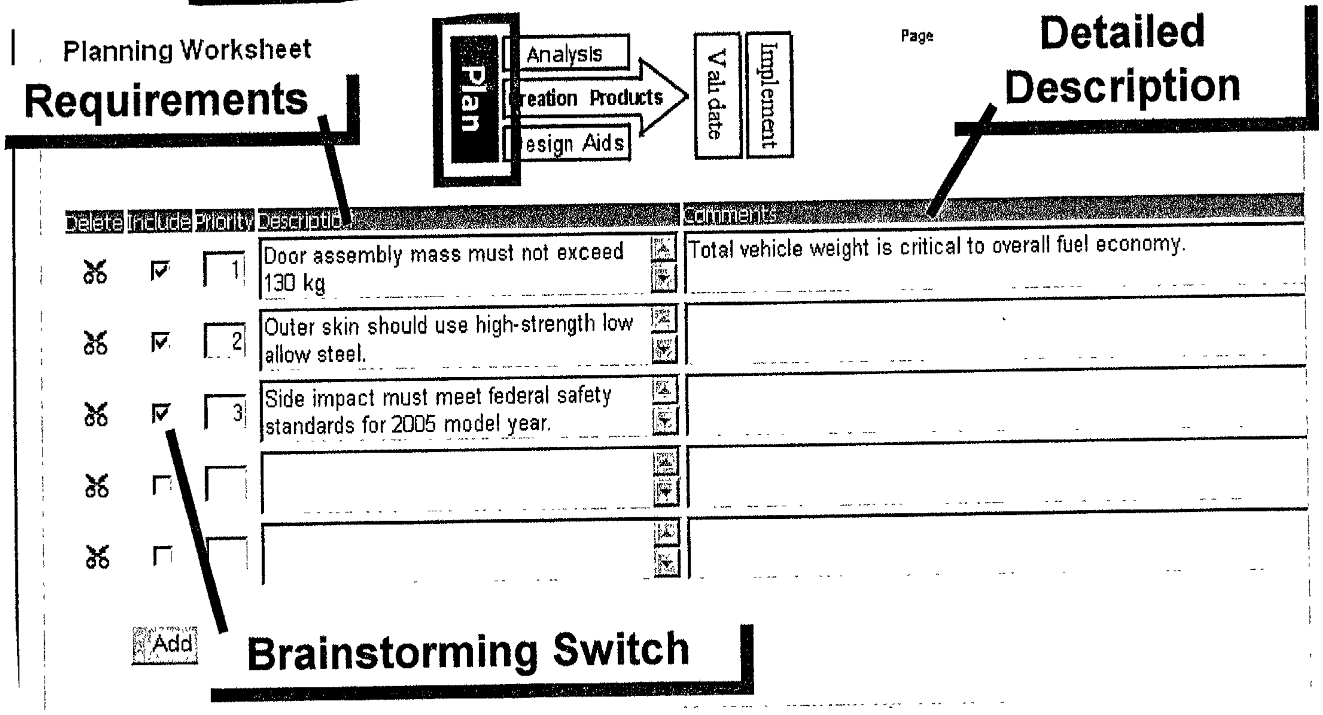
Worcenter Rate

Process Time

Piece Cost

FIG 12

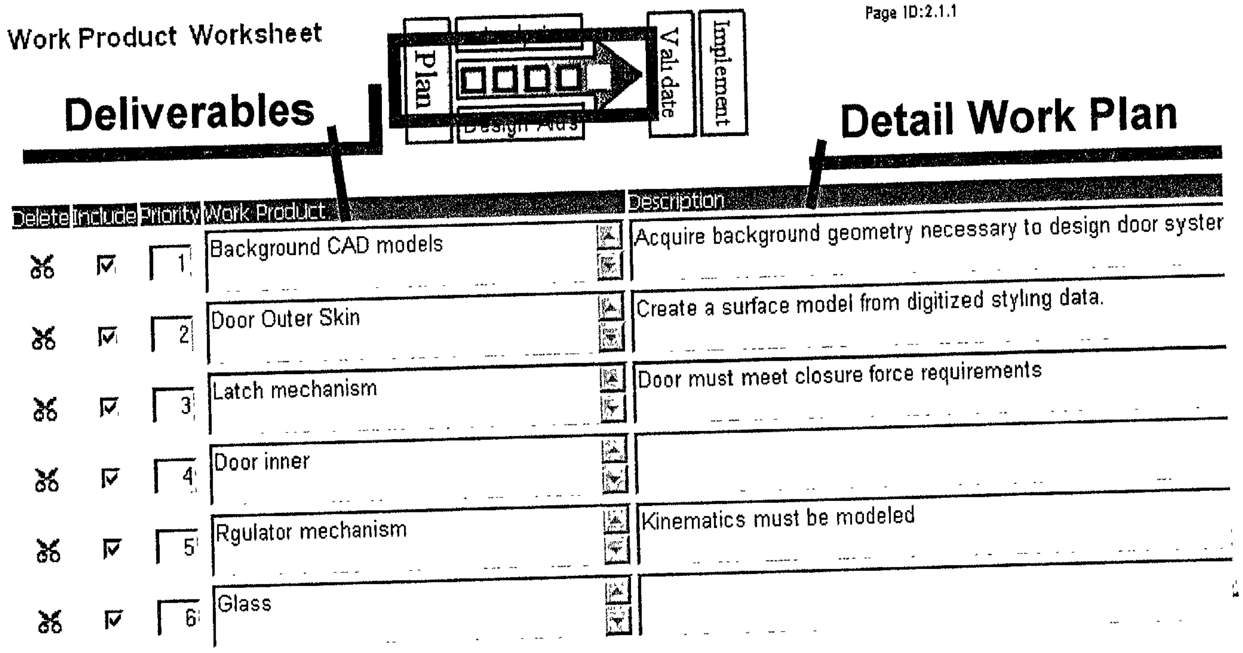
Business Plan Drill Down – Level 3



Delete	Include	Priority	Description	Comments
✂	☑	1	Door assembly mass must not exceed 130 kg	Total vehicle weight is critical to overall fuel economy.
✂	☑	2	Outer skin should use high-strength low allow steel.	
✂	☑	3	Side impact must meet federal safety standards for 2005 model year.	
✂	☐			
✂	☐			

FIG 13

Business Plan Drill Down – Level 3



Work Product Worksheet

Page ID:2.1.1

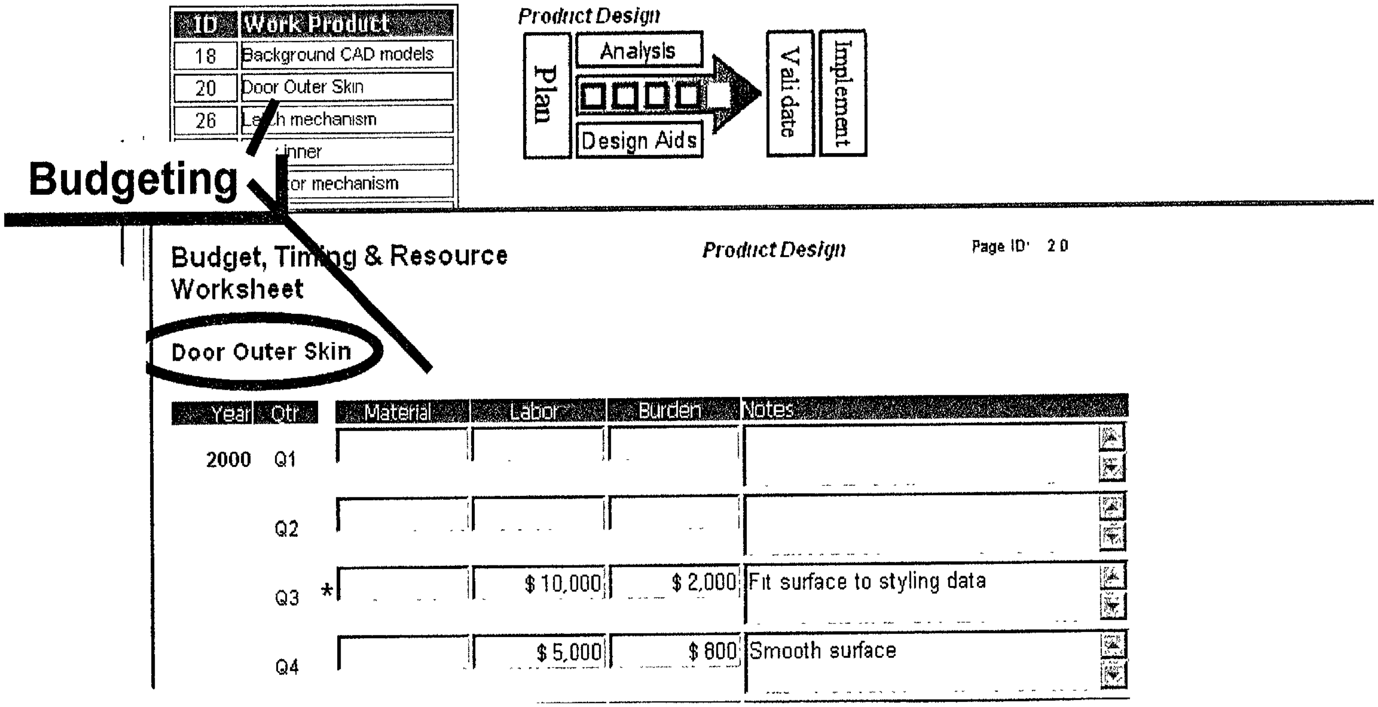
Deliverables

Detail Work Plan

Delete	Include	Priority	Work Product	Description
✂	☑	1	Background CAD models	Acquire background geometry necessary to design door syster
✂	☑	2	Door Outer Skin	Create a surface model from digitized styling data.
✂	☑	3	Latch mechanism	Door must meet closure force requirements
✂	☑	4	Door inner	
✂	☑	5	Rgulator mechanism	Kinematics must be modeled
✂	☑	6	Glass	

FIG 14

Business Plan Drill Down – Level 3



ID	Work Product
18	Background CAD models
20	Door Outer Skin
26	Le[illegible]h mechanism
	inner
	or mechanism

Budgeting

Budget, Timing & Resource Worksheet

Product Design

Page ID: 20

Door Outer Skin

Year	Qtr		Material	Labor	Burden	Notes
2000	Q1					
	Q2					
	Q3	*		$ 10,000	$ 2,000	Fit surface to styling data
	Q4			$ 5,000	$ 800	Smooth surface

FIG 15

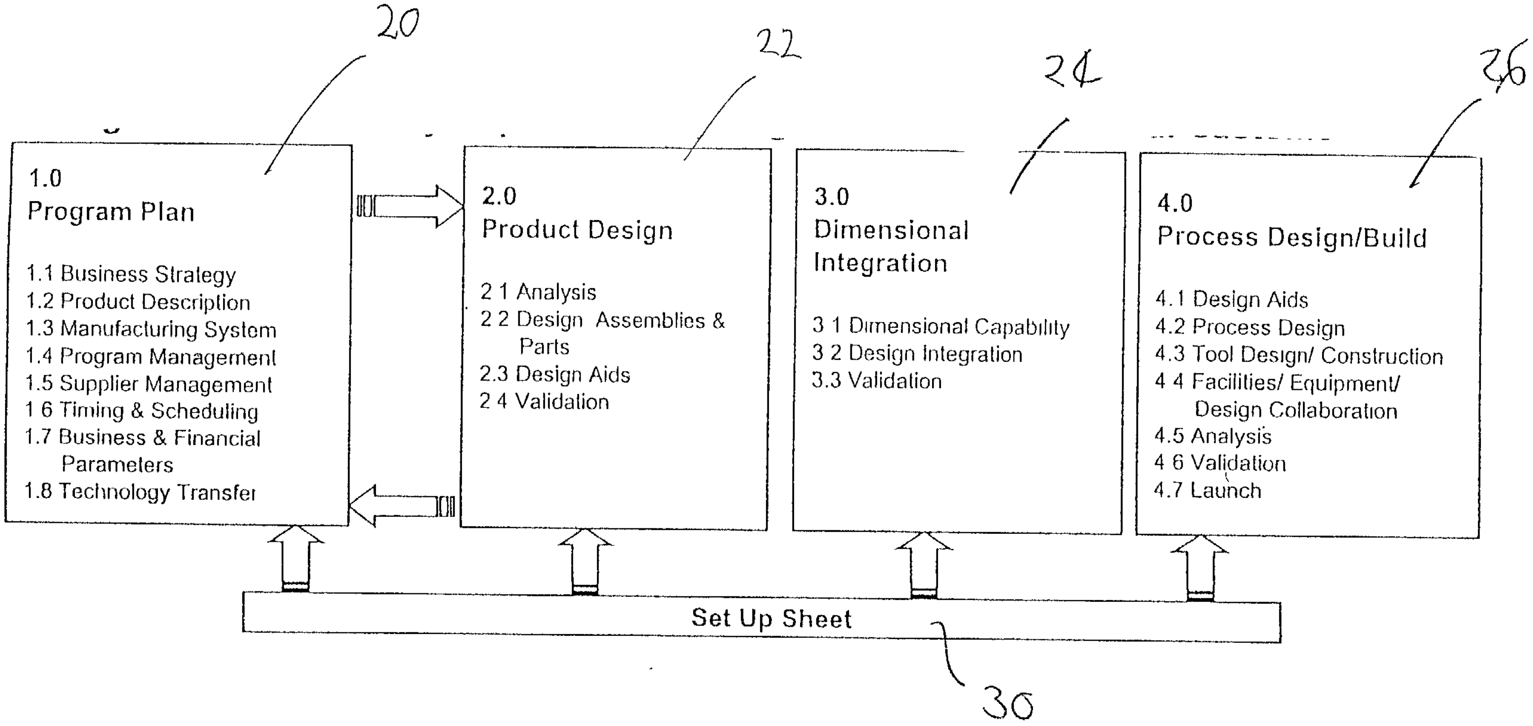


FIG. 16

JMF102A

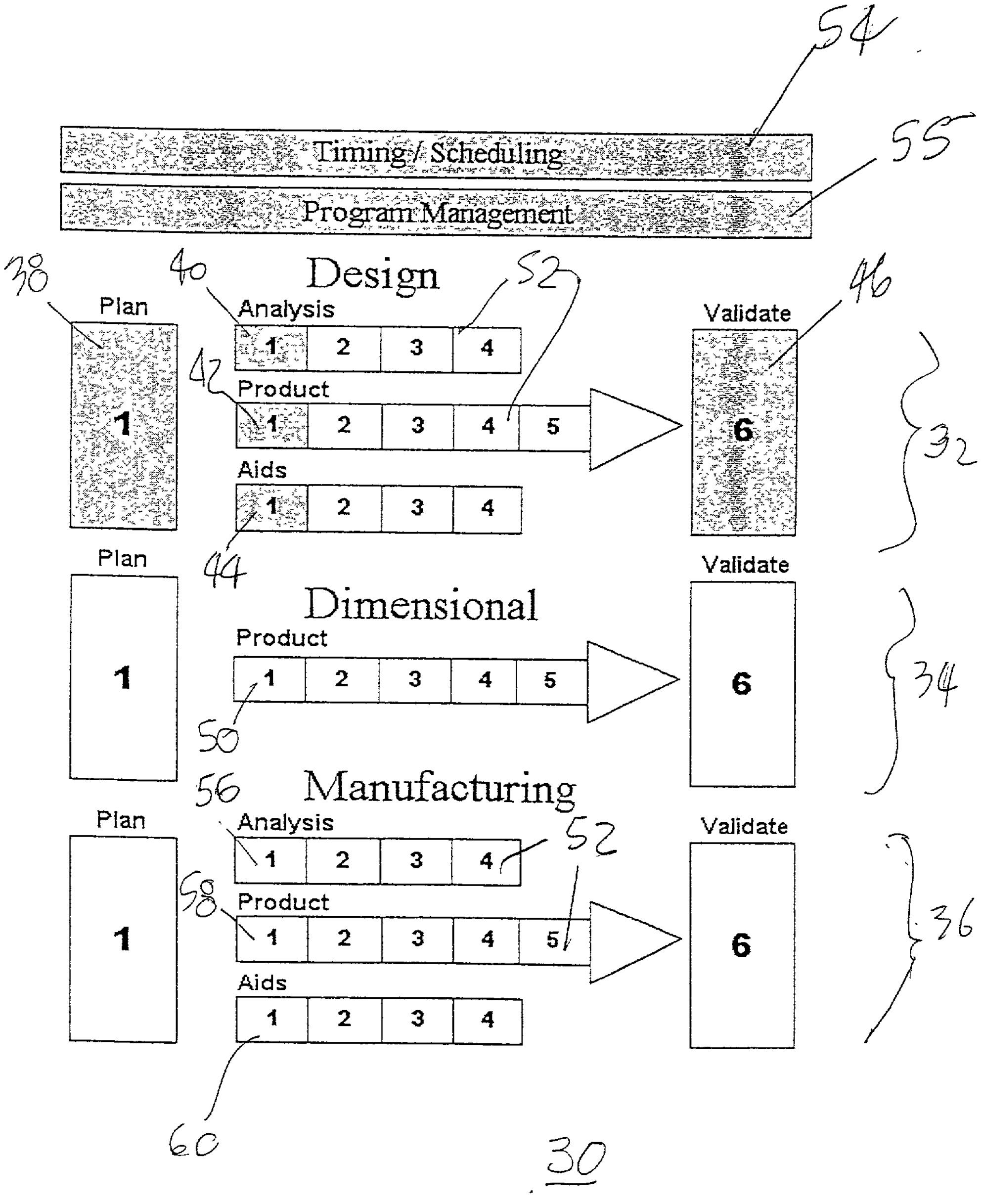

Timing / Scheduling
Program Management
Design
Plan
Analysis
Validate
Product
Aids
Plan
Validate
Dimensional
Product
Manufacturing
Plan
Analysis
Validate
Product
Aids

FIG. ~~2~~17

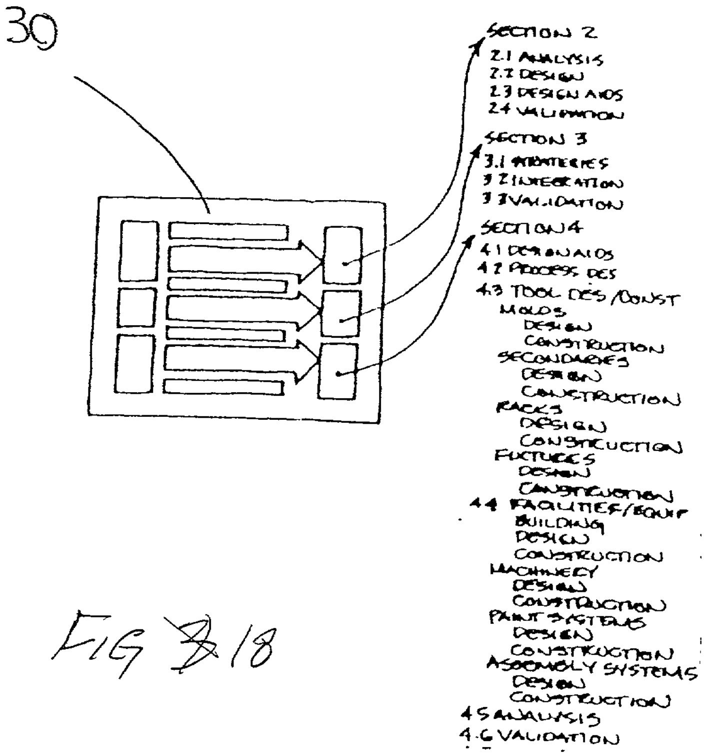
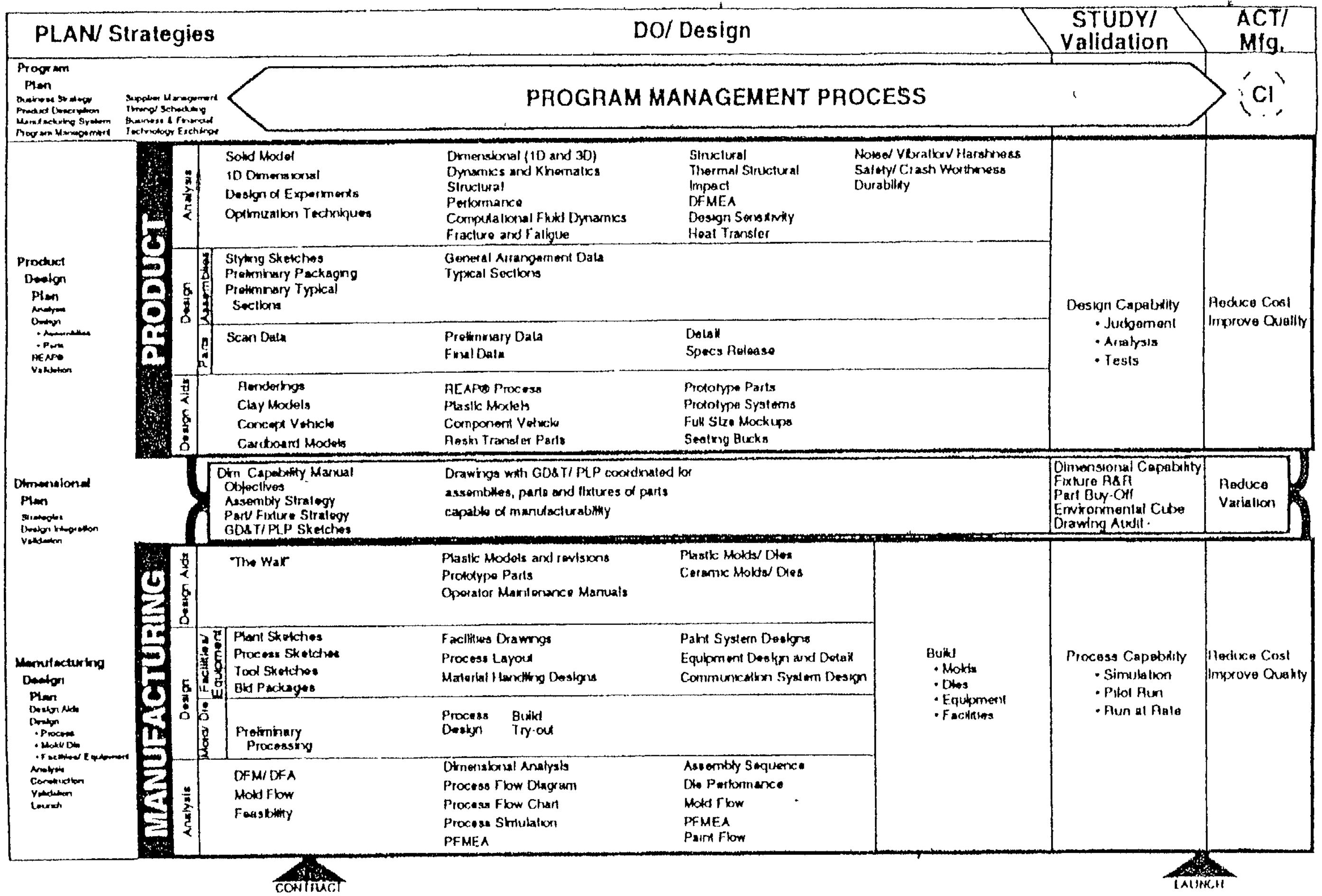
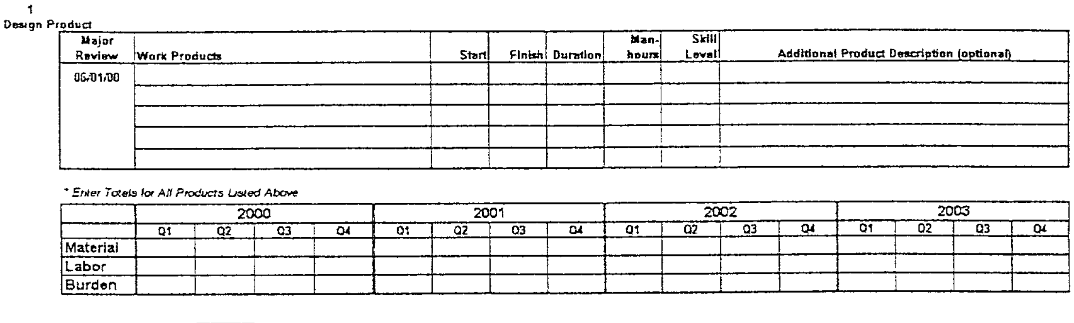


FIG ~~8~~ 18

09552845.041601


PLAN/ Strategies
DO/ Design
STUDY/ Validation
ACT/ Mfg.
Program
Plan
Business Strategy
Product Description
Manufacturing System
Program Management
Supplier Management
Timing/ Scheduling
Business & Financial
Technology Exchange
PROGRAM MANAGEMENT PROCESS
CI
Product
Design
Plan
Analysis
Design
• Assemblies
• Parts
REAP®
Validation
PRODUCT
Analysis
Solid Model
1D Dimensional
Design of Experiments
Optimization Techniques
Dimensional (1D and 3D)
Dynamics and Kinematics
Structural
Performance
Computational Fluid Dynamics
Fracture and Fatigue
Structural
Thermal Structural
Impact
DFMEA
Design Sensitivity
Heat Transfer
Noise/ Vibration/ Harshness
Safety/ Crash Worthiness
Durability
Design
Assemblies
Styling Sketches
Preliminary Packaging
Preliminary Typical Sections
General Arrangement Data
Typical Sections
Parts
Scan Data
Preliminary Data
Final Data
Detail
Specs Release
Design Aids
Renderings
Clay Models
Concept Vehicle
Cardboard Models
REAP® Process
Plastic Models
Component Vehicle
Resin Transfer Parts
Prototype Parts
Prototype Systems
Full Size Mockups
Seating Bucks
Design Capability
• Judgement
• Analysis
• Tests
Reduce Cost
Improve Quality
Dimensional
Plan
Strategies
Design Integration
Validation
Dim. Capability Manual
Objectives
Assembly Strategy
Part/ Fixture Strategy
GD&T/ PLP Sketches
Drawings with GD&T/ PLP coordinated for assemblies, parts and fixtures of parts capable of manufacturability
Dimensional Capability
Fixture R&R
Part Buy-Off
Environmental Cube
Drawing Audit
Reduce Variation
Manufacturing
Design
Plan
Design Aids
Design
• Process
• Mold/ Die
• Facilities/ Equipment
Analysis
Construction
Validation
Launch
MANUFACTURING
Design Aids
"The Wall"
Plastic Models and revisions
Prototype Parts
Operator Maintenance Manuals
Plastic Molds/ Dies
Ceramic Molds/ Dies
Design
Facilities/ Equipment
Plant Sketches
Process Sketches
Tool Sketches
Bid Packages
Facilities Drawings
Process Layout
Material Handling Designs
Paint System Designs
Equipment Design and Detail
Communication System Design
Mold/ Die
Preliminary Processing
Process Design
Build Try-out
Analysis
DFM/ DFA
Mold Flow
Feasibility
Dimensional Analysis
Process Flow Diagram
Process Flow Chart
Process Simulation
PFMEA
Assembly Sequence
Die Performance
Mold Flow
PFMEA
Paint Flow
Build
• Molds
• Dies
• Equipment
• Facilities
Process Capability
• Simulation
• Pilot Run
• Run at Rate
Reduce Cost
Improve Quality
CONTRACT
LAUNCH

FG #19



1
Design Product

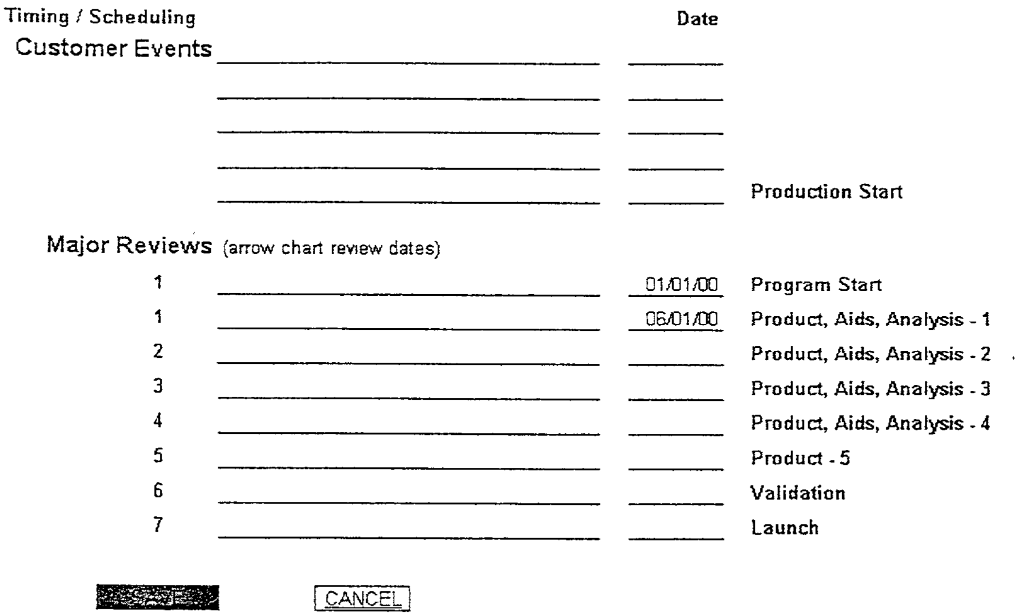
Major Review	Work Products	Start	Finish	Duration	Man-hours	Skill Level	Additional Product Description (optional)
06/01/00							

* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

42

FIG. ~~3~~20



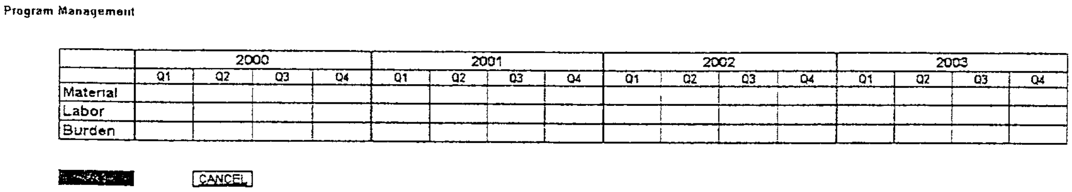
Timing / Scheduling

		Date	
Customer Events			
			Production Start

Major Reviews (arrow chart review dates)

1		01/01/00	Program Start
1		06/01/00	Product, Aids, Analysis - 1
2			Product, Aids, Analysis - 2
3			Product, Aids, Analysis - 3
4			Product, Aids, Analysis - 4
5			Product - 5
6			Validation
7			Launch

FIG. ~~6~~21

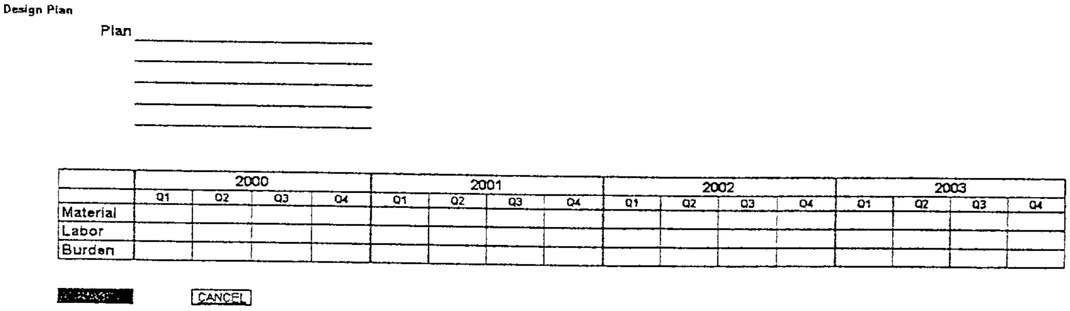


Program Management

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

[redacted] CANCEL

FIG 22



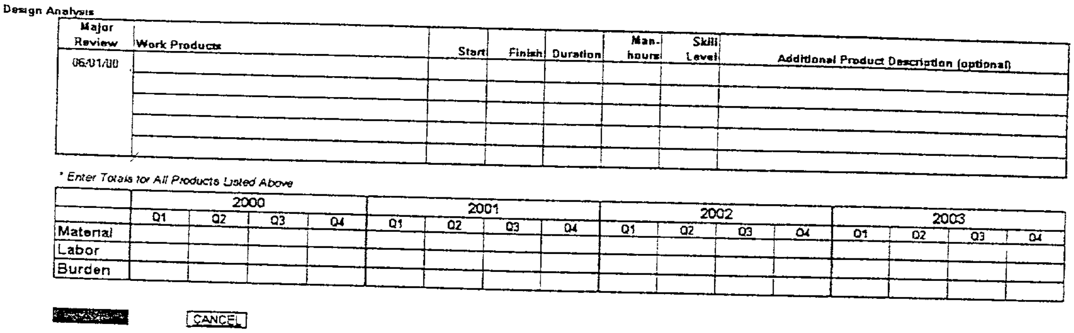
Design Plan

Plan ________________________

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

[redacted] CANCEL

FIG 23



Design Analysis

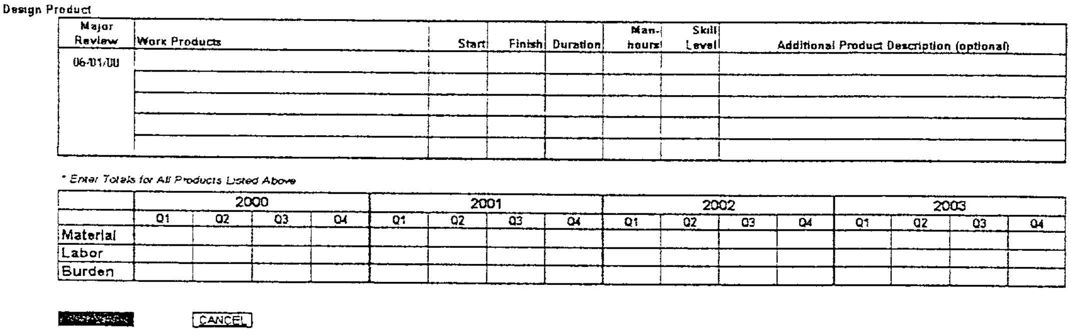
Major Review	Work Products	Start	Finish	Duration	Man-hours	Skill Level	Additional Product Description (optional)
06/01/00							

* *Enter Totals for All Products Listed Above*

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

[redacted] CANCEL

FIG 24



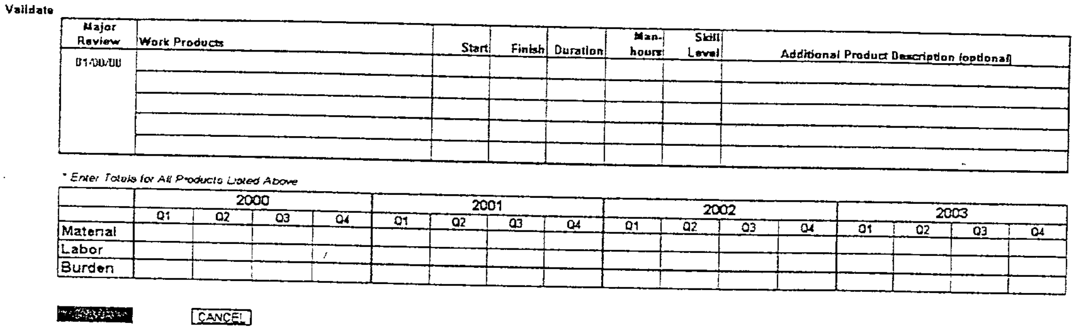
Design Product

Major Review	Work Products	Start	Finish	Duration	Man-hours	Skill Level	Additional Product Description (optional)
06/01/00							

* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

FIG ~~E0~~25



Validate

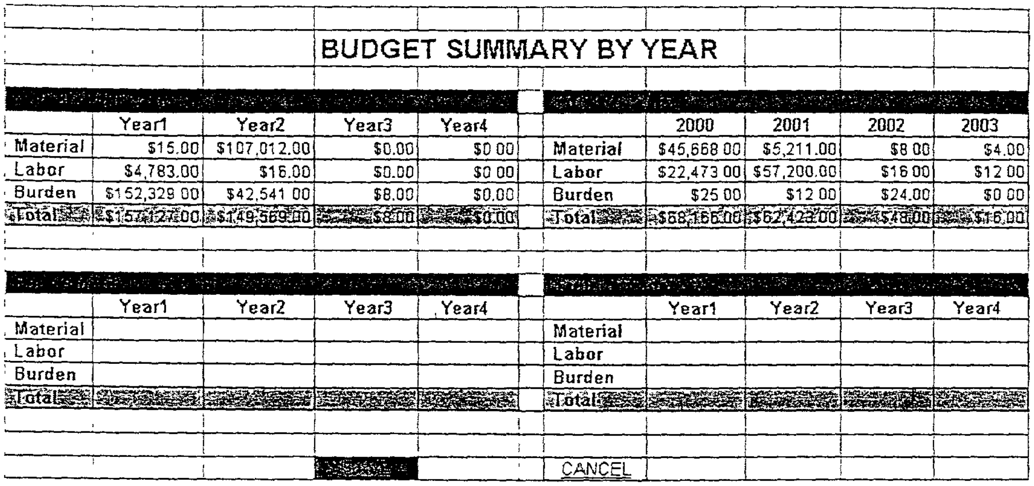
Major Review	Work Products	Start	Finish	Duration	Man-hours	Skill Level	Additional Product Description (optional)
01/00/00							

* Enter Totals for All Products Listed Above

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Material																
Labor																
Burden																

FIG ~~E~~26

09836545.111501



BUDGET SUMMARY BY YEAR

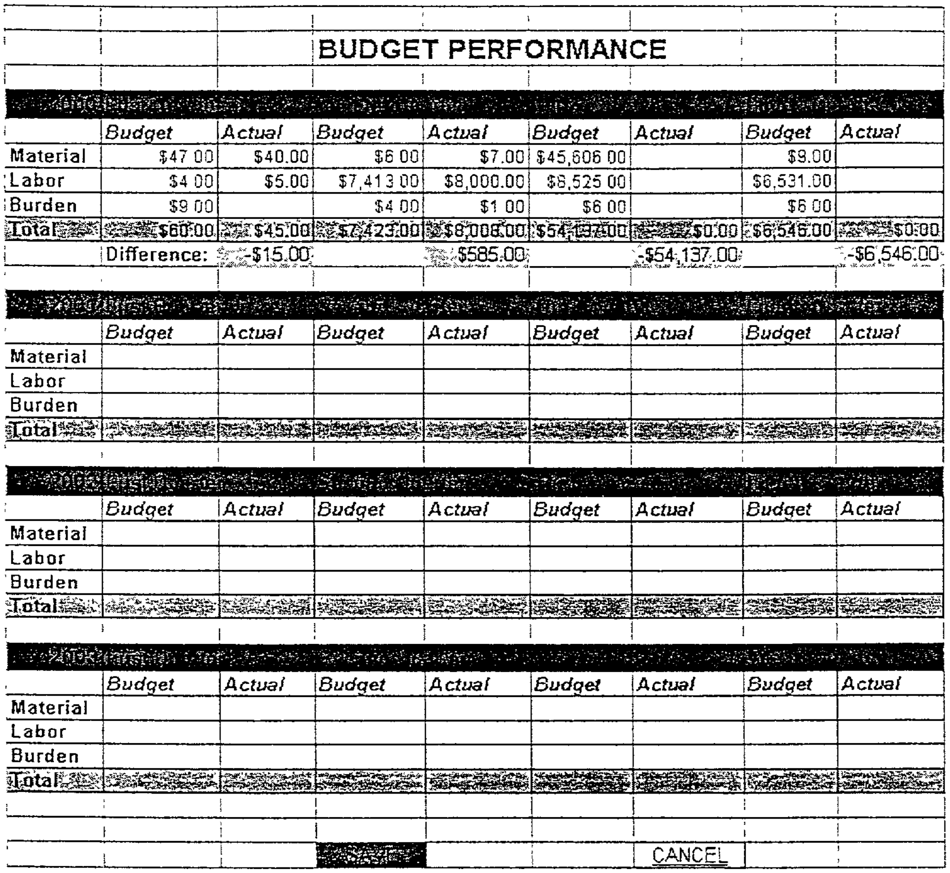
	Year1	Year2	Year3	Year4
Material	$15.00	$107,012.00	$0.00	$0 00
Labor	$4,783.00	$16.00	$0.00	$0 00
Burden	$152,329 00	$42,541 00	$8.00	$0.00
Total	$157,127.00	$149,569.00	$8.00	$0.00

	2000	2001	2002	2003
Material	$45,668 00	$5,211.00	$8 00	$4.00
Labor	$22,473 00	$57,200.00	$16 00	$12 00
Burden	$25 00	$12 00	$24.00	$0 00
Total	$68,166.00	$62,423.00	$48.00	$16.00

	Year1	Year2	Year3	Year4
Material				
Labor				
Burden				
Total				

	Year1	Year2	Year3	Year4
Material				
Labor				
Burden				
Total				

FIG ~~2~~ 27



BUDGET PERFORMANCE

[illegible]

	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Material	$47 00	$40.00	$6 00	$7.00	$45,606 00		$9.00	
Labor	$4 00	$5.00	$7,413 00	$8,000.00	$8,525 00		$6,531.00	
Burden	$9 00		$4 00	$1 00	$6 00		$6 00	
Total	$60.00	$45.00	$7,423.00	$8,008.00	$54,137.00	$0.00	$6,546.00	$0.00
	Difference:	-$15.00		$585.00		-$54,137.00		-$6,546.00

[illegible]

	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Material								
Labor								
Burden								
Total								

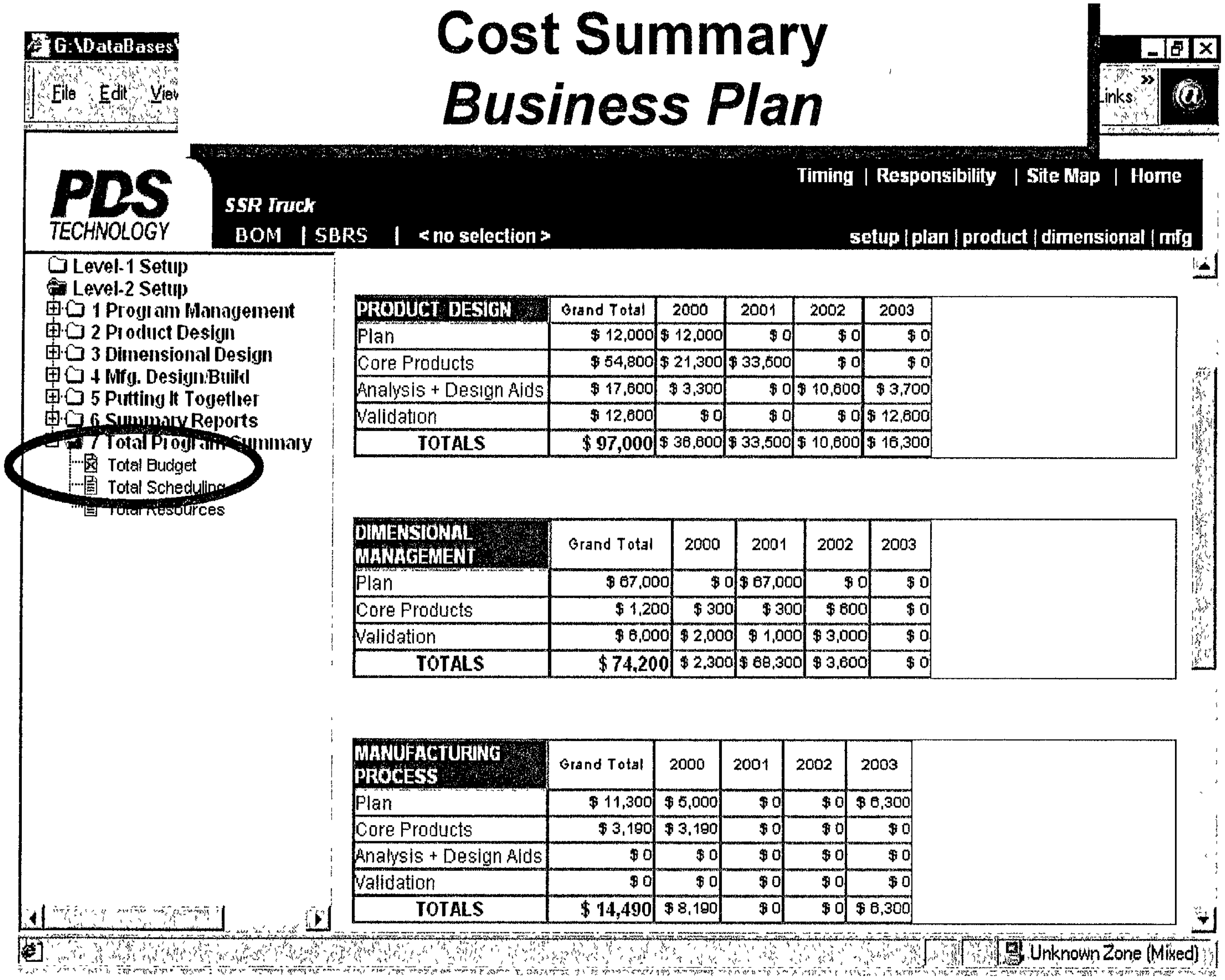
[illegible]

	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Material								
Labor								
Burden								
Total								

[illegible]

	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Material								
Labor								
Burden								
Total								

FIG ~~8~~ 28



Cost Summary
Business Plan

PRODUCT DESIGN	Grand Total	2000	2001	2002	2003
Plan	$ 12,000	$ 12,000	$ 0	$ 0	$ 0
Core Products	$ 54,800	$ 21,300	$ 33,500	$ 0	$ 0
Analysis + Design Aids	$ 17,600	$ 3,300	$ 0	$ 10,600	$ 3,700
Validation	$ 12,600	$ 0	$ 0	$ 0	$ 12,600
TOTALS	**$ 97,000**	$ 36,600	$ 33,500	$ 10,600	$ 16,300

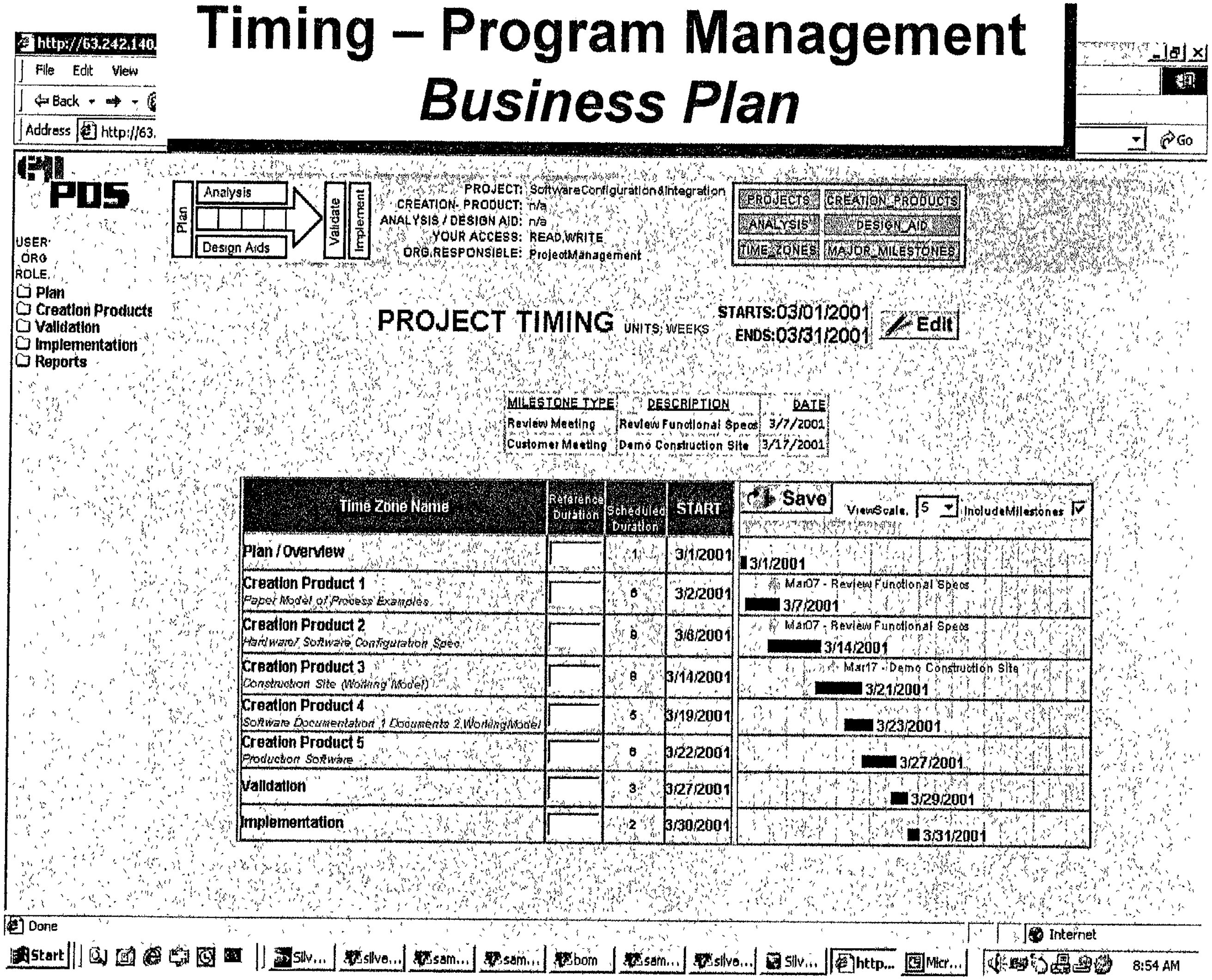
DIMENSIONAL MANAGEMENT	Grand Total	2000	2001	2002	2003
Plan	$ 67,000	$ 0	$ 67,000	$ 0	$ 0
Core Products	$ 1,200	$ 300	$ 300	$ 600	$ 0
Validation	$ 6,000	$ 2,000	$ 1,000	$ 3,000	$ 0
TOTALS	**$ 74,200**	$ 2,300	$ 68,300	$ 3,600	$ 0

MANUFACTURING PROCESS	Grand Total	2000	2001	2002	2003
Plan	$ 11,300	$ 5,000	$ 0	$ 0	$ 6,300
Core Products	$ 3,190	$ 3,190	$ 0	$ 0	$ 0
Analysis + Design Aids	$ 0	$ 0	$ 0	$ 0	$ 0
Validation	$ 0	$ 0	$ 0	$ 0	$ 0
TOTALS	**$ 14,490**	$ 8,190	$ 0	$ 0	$ 6,300

FIG 29

31

Timing – Program Management
Business Plan



PROJECT: SoftwareConfiguration&Integration
CREATION PRODUCT: n/a
ANALYSIS / DESIGN AID: n/a
YOUR ACCESS: READ,WRITE
ORG RESPONSIBLE: ProjectManagement

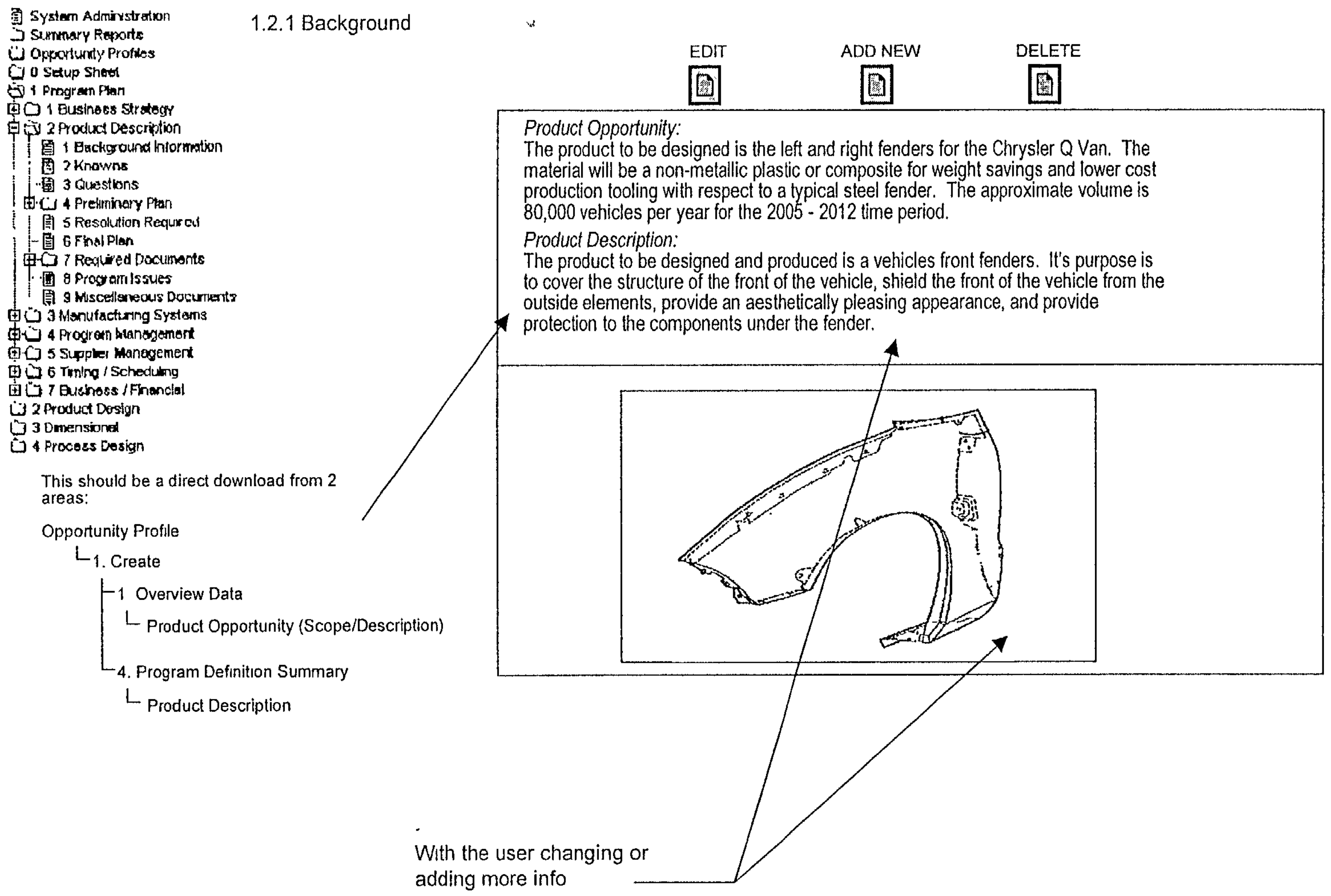
PROJECT TIMING UNITS: WEEKS STARTS:03/01/2001 ENDS:03/31/2001

MILESTONE TYPE	DESCRIPTION	DATE
Review Meeting	Review Functional Specs	3/7/2001
Customer Meeting	Demo Construction Site	3/17/2001

ViewScale. 5 IncludeMilestones ☑

Time Zone Name	Reference Duration	Scheduled Duration	START	
Plan / Overview		1	3/1/2001	3/1/2001
Creation Product 1 *Paper Model of Process Examples*		6	3/2/2001	Mar07 - Review Functional Specs 3/7/2001
Creation Product 2 *Hardware/ Software Configuration Spec*		8	3/8/2001	Mar07 - Review Functional Specs 3/14/2001
Creation Product 3 *Construction Site (Working Model)*		8	3/14/2001	Mar17 - Demo Construction Site 3/21/2001
Creation Product 4 *Software Documentation 1 Documents 2.WorkingModel*		5	3/19/2001	3/23/2001
Creation Product 5 *Production Software*		6	3/22/2001	3/27/2001
Validation		3	3/27/2001	3/29/2001
Implementation		2	3/30/2001	3/31/2001

FIG 30



Product Opportunity:
The product to be designed is the left and right fenders for the Chrysler Q Van. The material will be a non-metallic plastic or composite for weight savings and lower cost production tooling with respect to a typical steel fender. The approximate volume is 80,000 vehicles per year for the 2005 - 2012 time period.

Product Description:
The product to be designed and produced is a vehicles front fenders. It's purpose is to cover the structure of the front of the vehicle, shield the front of the vehicle from the outside elements, provide an aesthetically pleasing appearance, and provide protection to the components under the fender.

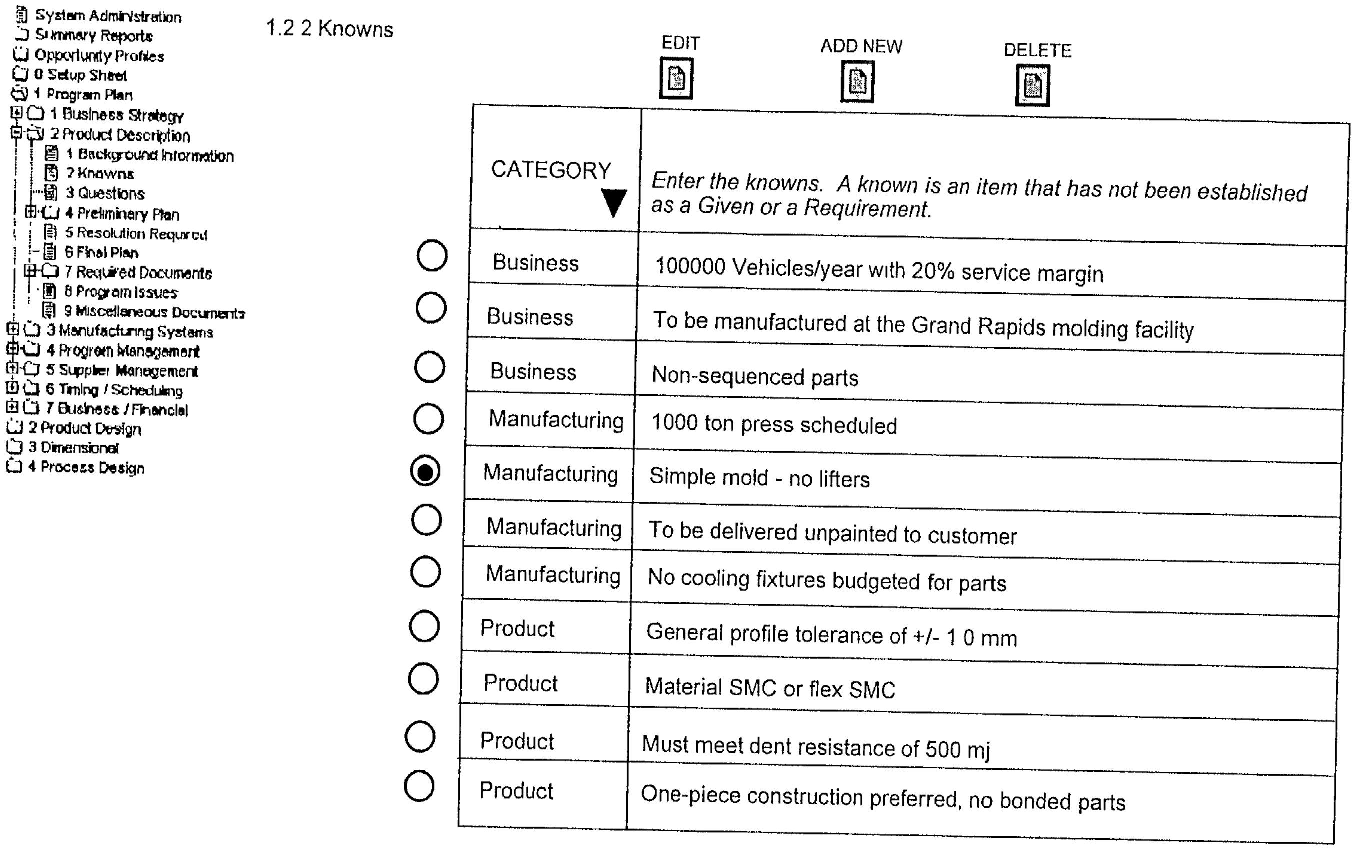
This should be a direct download from 2 areas:

Opportunity Profile
- 1. Create
  - 1 Overview Data
    - Product Opportunity (Scope/Description)
  - 4. Program Definition Summary
    - Product Description

With the user changing or adding more info

FIG 31A

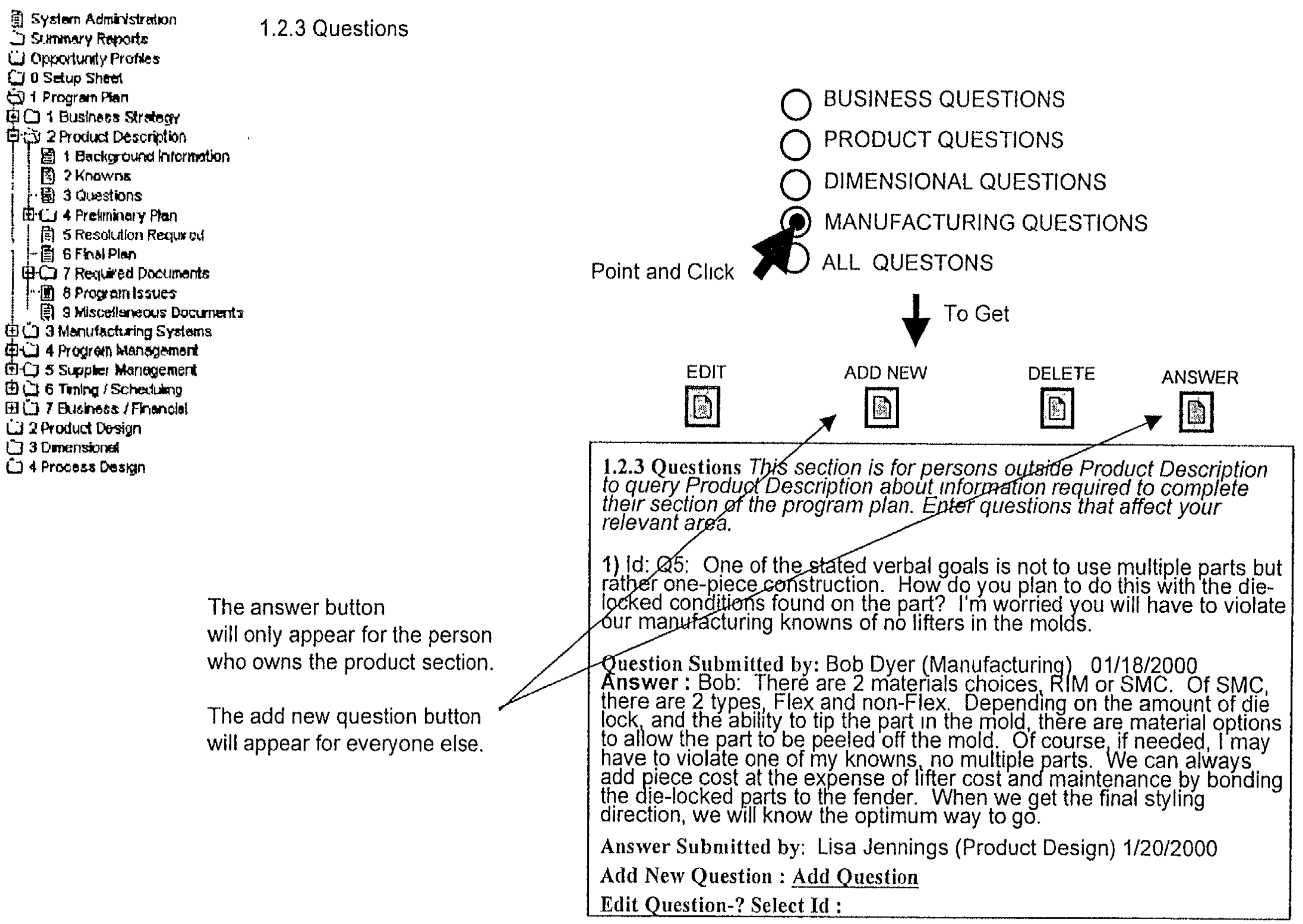
0992845.111301



1.2 2 Knowns

	CATEGORY ▼	*Enter the knowns. A known is an item that has not been established as a Given or a Requirement.*
○	Business	100000 Vehicles/year with 20% service margin
○	Business	To be manufactured at the Grand Rapids molding facility
○	Business	Non-sequenced parts
○	Manufacturing	1000 ton press scheduled
●	Manufacturing	Simple mold - no lifters
○	Manufacturing	To be delivered unpainted to customer
○	Manufacturing	No cooling fixtures budgeted for parts
○	Product	General profile tolerance of +/- 1 0 mm
○	Product	Material SMC or flex SMC
○	Product	Must meet dent resistance of 500 mj
○	Product	One-piece construction preferred, no bonded parts

FIG 31B



1.2.3 Questions *This section is for persons outside Product Description to query Product Description about information required to complete their section of the program plan. Enter questions that affect your relevant area.*

1) Id: Q5: One of the stated verbal goals is not to use multiple parts but rather one-piece construction. How do you plan to do this with the die-locked conditions found on the part? I'm worried you will have to violate our manufacturing knowns of no lifters in the molds.

Question Submitted by: Bob Dyer (Manufacturing) 01/18/2000
Answer : Bob: There are 2 materials choices, RIM or SMC. Of SMC, there are 2 types, Flex and non-Flex. Depending on the amount of die lock, and the ability to tip the part in the mold, there are material options to allow the part to be peeled off the mold. Of course, if needed, I may have to violate one of my knowns, no multiple parts. We can always add piece cost at the expense of lifter cost and maintenance by bonding the die-locked parts to the fender. When we get the final styling direction, we will know the optimum way to go.

Answer Submitted by: Lisa Jennings (Product Design) 1/20/2000

Add New Question : Add Question

Edit Question-? Select Id :

The answer button will only appear for the person who owns the product section.

The add new question button will appear for everyone else.

FIG 31C

09993845 .111601

- System Administration
- Summary Reports
- Opportunity Profiles
- 0 Setup Sheet
- 1 Program Plan
  - ⊞ 1 Business Strategy
  - ⊟ 2 Product Description
    - 1 Background Information
    - 2 Knowns
    - 3 Questions
    - ⊞ 4 Preliminary Plan
    - 5 Resolution Required
    - 6 Final Plan
    - ⊞ 7 Required Documents
    - 8 Program Issues
    - 9 Miscellaneous Documents
  - ⊞ 3 Manufacturing Systems
  - ⊞ 4 Program Management
  - ⊞ 5 Supplier Management
  - ⊞ 6 Timing / Scheduling
  - ⊞ 7 Business / Financial
- 2 Product Design
- 3 Dimensional
- 4 Process Design

1.2 4 Preliminary Plan

Preliminary Plan:

The purpose of the preliminary plan is to provide basic information about the product that will be used to determine the overall business viability of the project. After key milestones, the preliminary plan becomes the final plan and portions of the plan are copied into section 2.0, product design. The preliminary plan consists of the following:

1.2.4.1- Product Concepts - word descriptions with sketches, pictures or links to other web sites that help describe the basics of the product

1.2.4.2 - Product Content - description of the overall product variations or options that need to be manufactured

1.2.4.3 - Bill of Material - The parts list with the hierarchy of the assembly structure for the product

1.2.4.4 - Alternate Strategies - Specific themes or descriptions of key initiatives within the product design that may affect the development of the product design. Examples may include material strategies, service strategies, or shipping strategies.

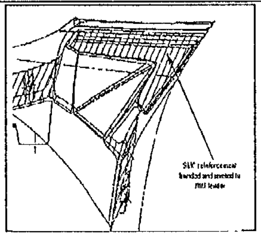
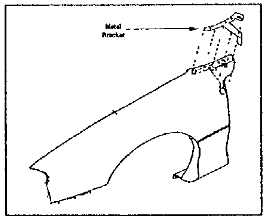
1.2.4.5 Product performance Criteria - Word descriptions with or without graphs or sketches that describe the requirements of the product.

FIG 31D

- System Administration
- Summary Reports
- Opportunity Profiles
- 0 Setup Sheet
- 1 Program Plan
  - 1 Business Strategy
  - 2 Product Description
    - 1 Background Information
    - 2 Knowns
    - 3 Questions
    - 4 Preliminary Plan
    - 5 Resolution Required
    - 6 Final Plan
    - 7 Required Documents
    - 8 Program Issues
    - 9 Miscellaneous Documents
  - 3 Manufacturing Systems
  - 4 Program Management
  - 5 Supplier Management
  - 6 Timing / Scheduling
  - 7 Business / Financial
- 2 Product Design
- 3 Dimensional
- 4 Process Design

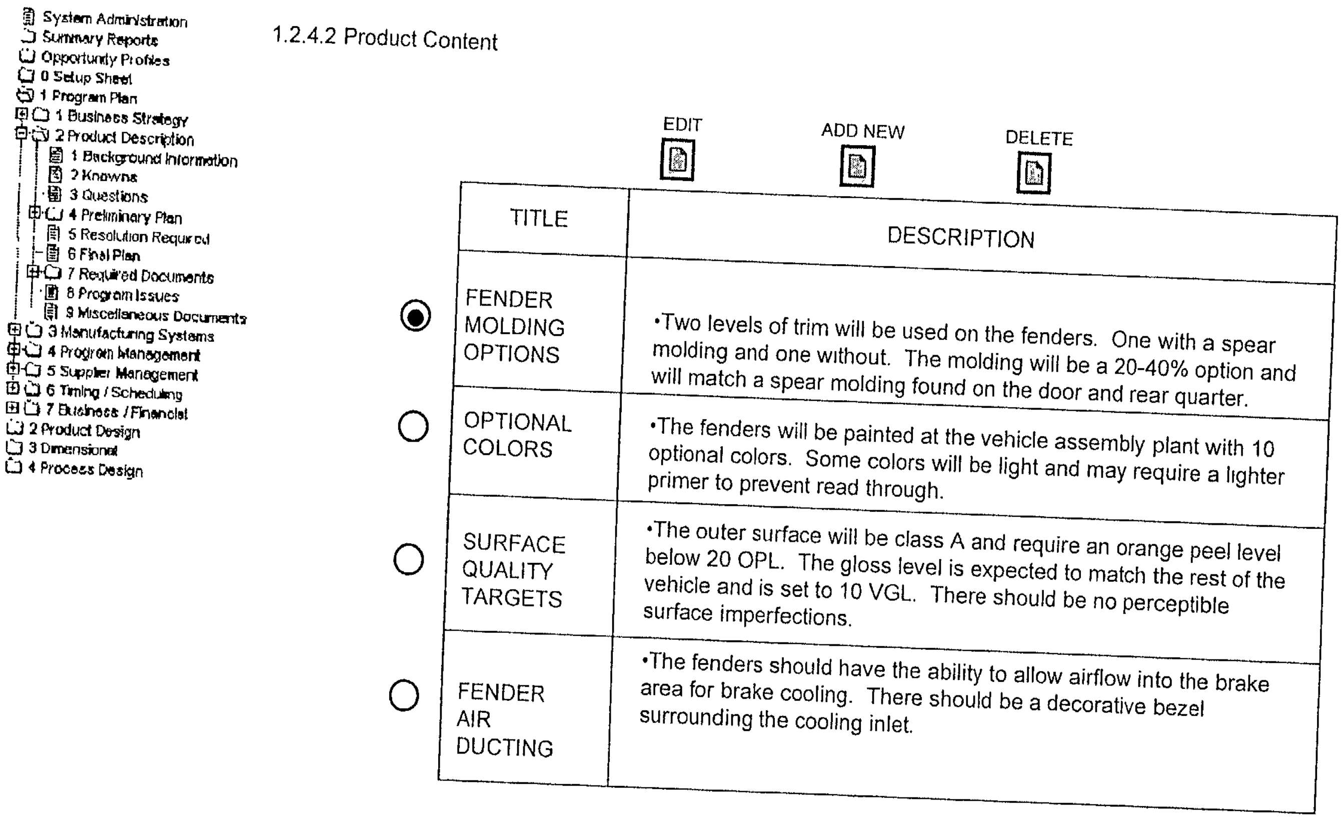
1 2.4.1 Product Concepts

EDIT ADD NEW DELETE

	TITLE	IMAGE	DESCRIPTION
○	SMC GUSSET FOR REAR UPPER CORNER STIFFNESS		NO ATTACHMENT, ADD STIFFENING GUSSET
●	METAL GUSSET FOR REAR UPPER CORNER STIFFNESS		ADD METAL BRACKET TO FENDER THAT WILL BECOME ASSEMBLY DATUM

The EDIT, ADD NEW, and DELETE buttons will only appear for the people defined by the responsibility matrix. The radio buttons to the left of the table will choose the row to be modified

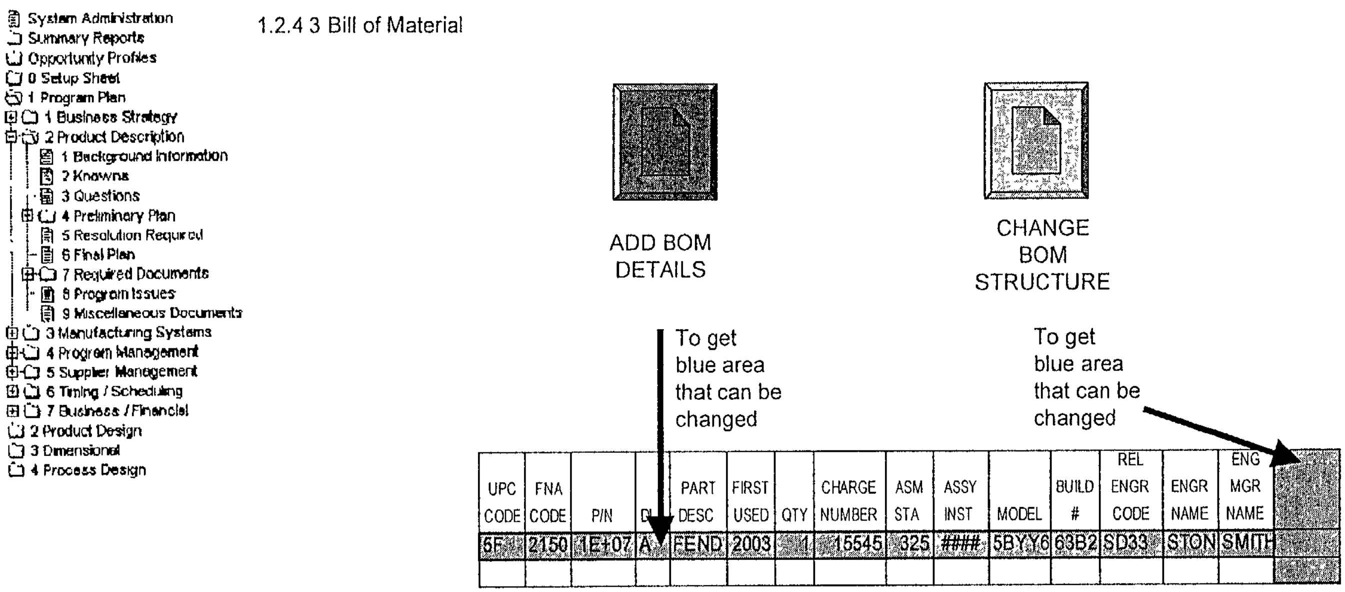
FIG 31E



1.2.4.2 Product Content

	TITLE	DESCRIPTION
●	FENDER MOLDING OPTIONS	•Two levels of trim will be used on the fenders. One with a spear molding and one without. The molding will be a 20-40% option and will match a spear molding found on the door and rear quarter.
○	OPTIONAL COLORS	•The fenders will be painted at the vehicle assembly plant with 10 optional colors. Some colors will be light and may require a lighter primer to prevent read through.
○	SURFACE QUALITY TARGETS	•The outer surface will be class A and require an orange peel level below 20 OPL. The gloss level is expected to match the rest of the vehicle and is set to 10 VGL. There should be no perceptible surface imperfections.
○	FENDER AIR DUCTING	•The fenders should have the ability to allow airflow into the brake area for brake cooling. There should be a decorative bezel surrounding the cooling inlet.

FIG 31F



To get blue area that can be changed

To get blue area that can be changed

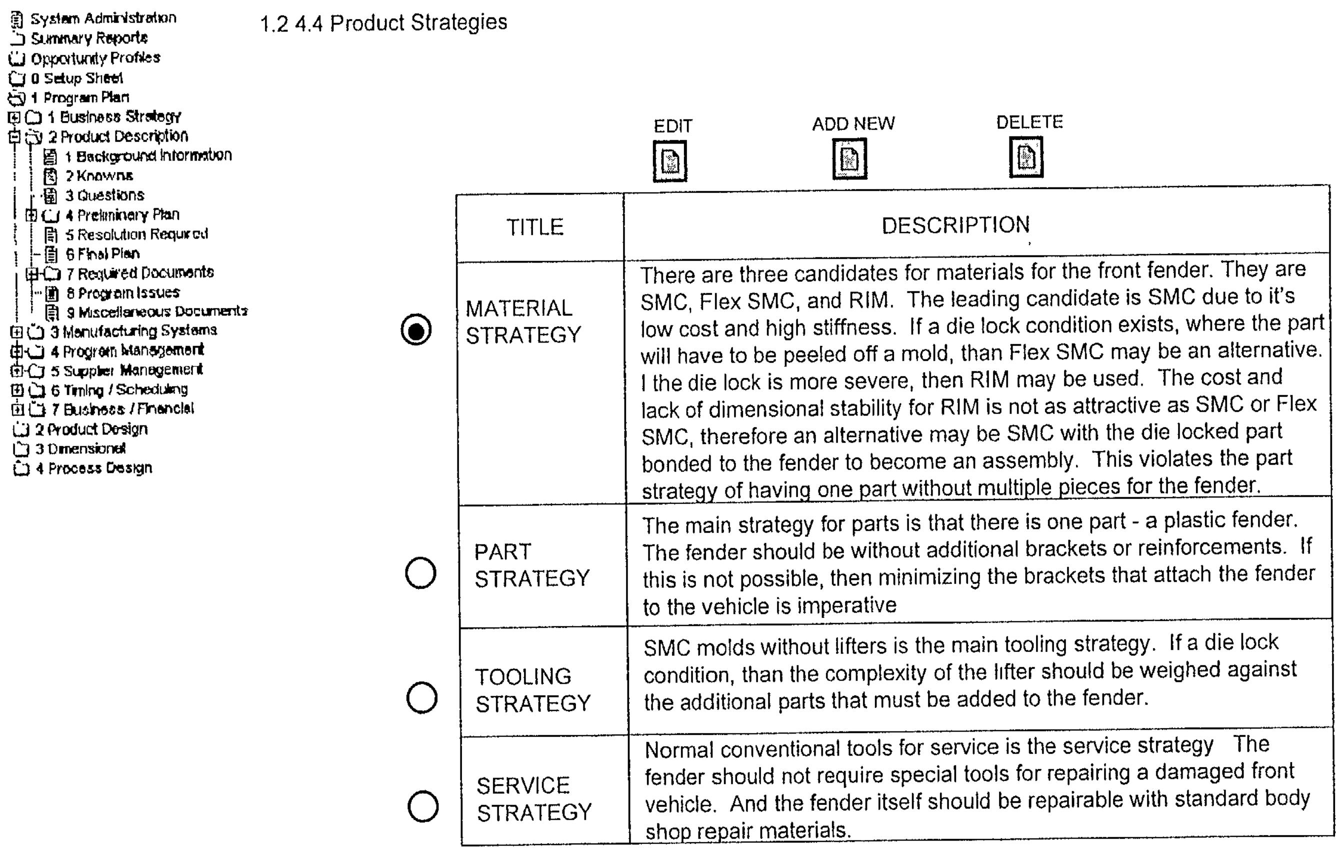
UPC CODE	FNA CODE	P/N	D	PART DESC	FIRST USED	QTY	CHARGE NUMBER	ASM STA	ASSY INST	MODEL	BUILD #	REL ENGR CODE	ENGR NAME	ENG MGR NAME	
5F	2150	1E+07	A	FEND	2003	1	15545	325	####	5BYY6	63B2	SD33	STON	SMITH	

THE PROGRAM LAUNCHED WOULD BE EXCEL FOR EXAMPLE WHERE ADDITIONAL COLUMNS AND TITLES CAN BE ADDED.

THE ABOVE EXAMPLE IS THE BOM COLUMN TITLES USED BY AN OEM:

FIG 31G

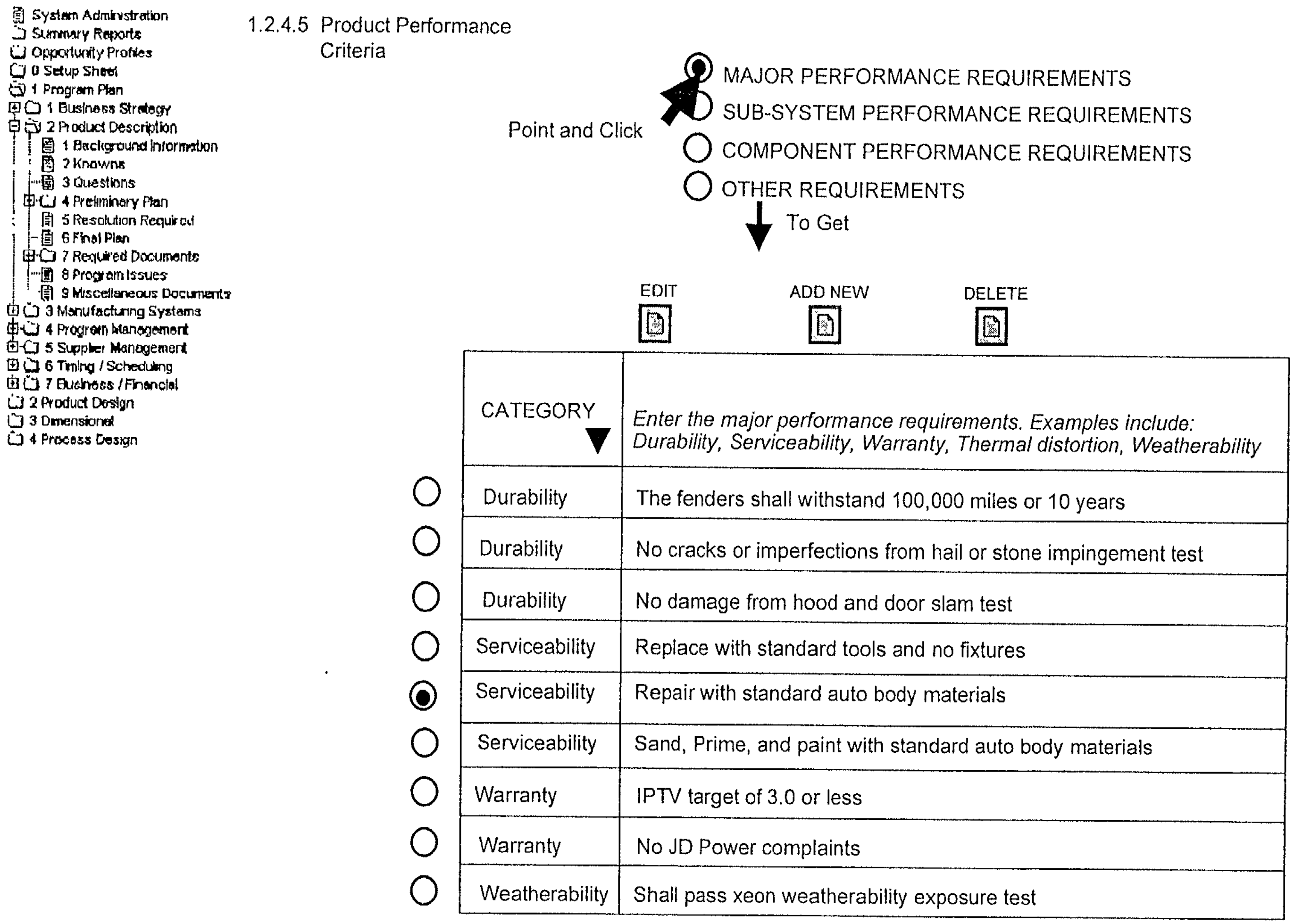
09993845 .111501



1.2 4.4 Product Strategies

	TITLE	DESCRIPTION
●	MATERIAL STRATEGY	There are three candidates for materials for the front fender. They are SMC, Flex SMC, and RIM. The leading candidate is SMC due to it's low cost and high stiffness. If a die lock condition exists, where the part will have to be peeled off a mold, than Flex SMC may be an alternative. I the die lock is more severe, then RIM may be used. The cost and lack of dimensional stability for RIM is not as attractive as SMC or Flex SMC, therefore an alternative may be SMC with the die locked part bonded to the fender to become an assembly. This violates the part strategy of having one part without multiple pieces for the fender.
○	PART STRATEGY	The main strategy for parts is that there is one part - a plastic fender. The fender should be without additional brackets or reinforcements. If this is not possible, then minimizing the brackets that attach the fender to the vehicle is imperative
○	TOOLING STRATEGY	SMC molds without lifters is the main tooling strategy. If a die lock condition, than the complexity of the lifter should be weighed against the additional parts that must be added to the fender.
○	SERVICE STRATEGY	Normal conventional tools for service is the service strategy The fender should not require special tools for repairing a damaged front vehicle. And the fender itself should be repairable with standard body shop repair materials.

FIG 31H

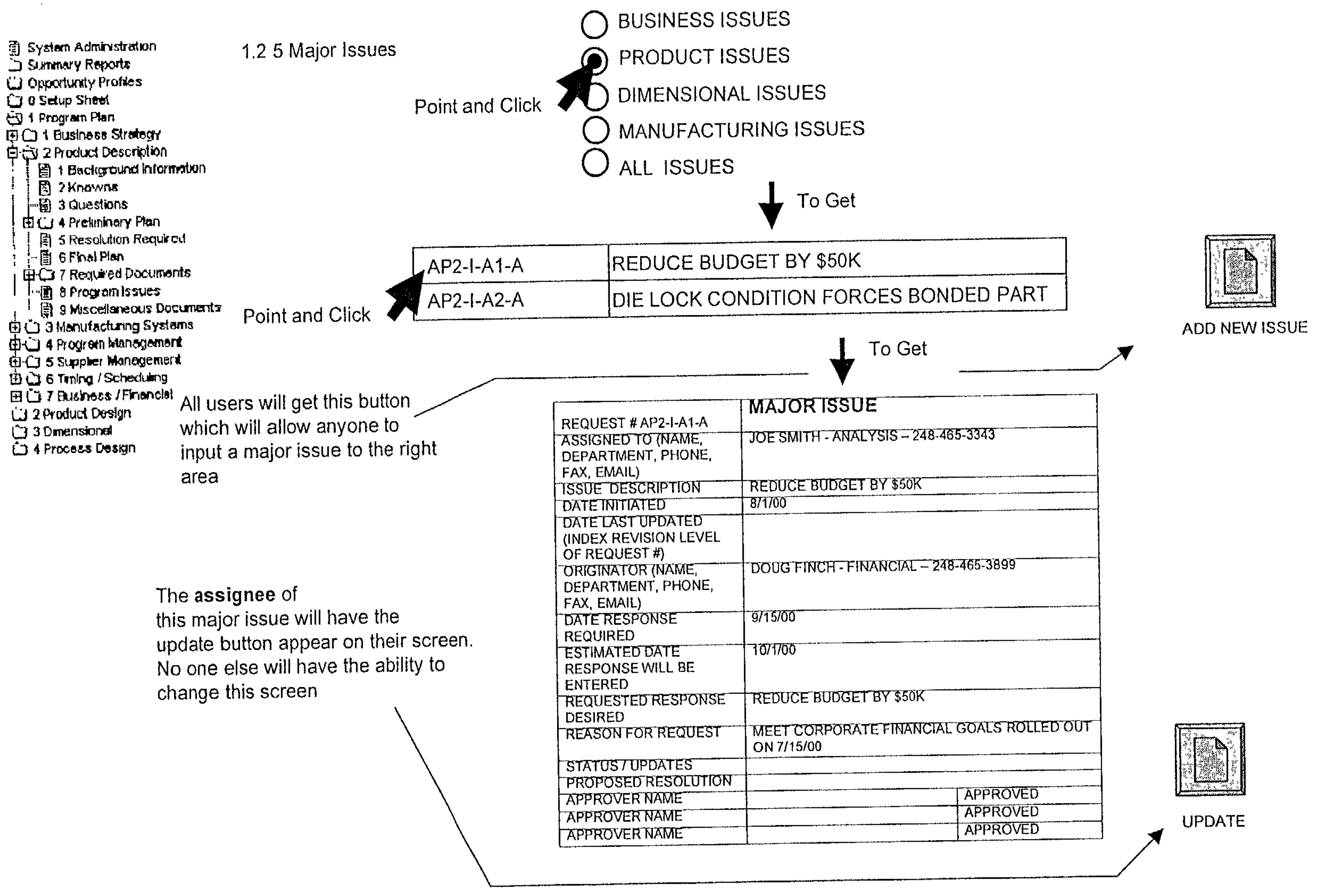


1.2.4.5 Product Performance Criteria

● MAJOR PERFORMANCE REQUIREMENTS
○ SUB-SYSTEM PERFORMANCE REQUIREMENTS
○ COMPONENT PERFORMANCE REQUIREMENTS
○ OTHER REQUIREMENTS

	CATEGORY ▼	*Enter the major performance requirements. Examples include: Durability, Serviceability, Warranty, Thermal distortion, Weatherability*
○	Durability	The fenders shall withstand 100,000 miles or 10 years
○	Durability	No cracks or imperfections from hail or stone impingement test
○	Durability	No damage from hood and door slam test
○	Serviceability	Replace with standard tools and no fixtures
●	Serviceability	Repair with standard auto body materials
○	Serviceability	Sand, Prime, and paint with standard auto body materials
○	Warranty	IPTV target of 3.0 or less
○	Warranty	No JD Power complaints
○	Weatherability	Shall pass xeon weatherability exposure test

FIG 31I



1.2 5 Major Issues

Point and Click

○ BUSINESS ISSUES
● PRODUCT ISSUES
○ DIMENSIONAL ISSUES
○ MANUFACTURING ISSUES
○ ALL ISSUES

To Get

AP2-I-A1-A	REDUCE BUDGET BY $50K
AP2-I-A2-A	DIE LOCK CONDITION FORCES BONDED PART

Point and Click

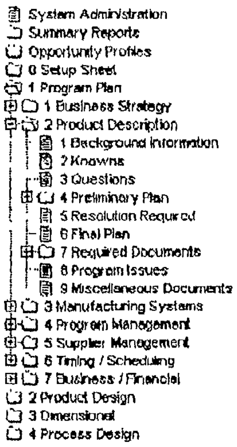
To Get

All users will get this button which will allow anyone to input a major issue to the right area

REQUEST # AP2-I-A1-A	**MAJOR ISSUE**	
ASSIGNED TO (NAME, DEPARTMENT, PHONE, FAX, EMAIL)	JOE SMITH - ANALYSIS – 248-465-3343	
ISSUE DESCRIPTION	REDUCE BUDGET BY $50K	
DATE INITIATED	8/1/00	
DATE LAST UPDATED (INDEX REVISION LEVEL OF REQUEST #)		
ORIGINATOR (NAME, DEPARTMENT, PHONE, FAX, EMAIL)	DOUG FINCH - FINANCIAL – 248-465-3899	
DATE RESPONSE REQUIRED	9/15/00	
ESTIMATED DATE RESPONSE WILL BE ENTERED	10/1/00	
REQUESTED RESPONSE DESIRED	REDUCE BUDGET BY $50K	
REASON FOR REQUEST	MEET CORPORATE FINANCIAL GOALS ROLLED OUT ON 7/15/00	
STATUS / UPDATES		
PROPOSED RESOLUTION		
APPROVER NAME		APPROVED
APPROVER NAME		APPROVED
APPROVER NAME		APPROVED

The **assignee** of this major issue will have the update button appear on their screen. No one else will have the ability to change this screen

FIG 31J



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  - 5 Supplier Management
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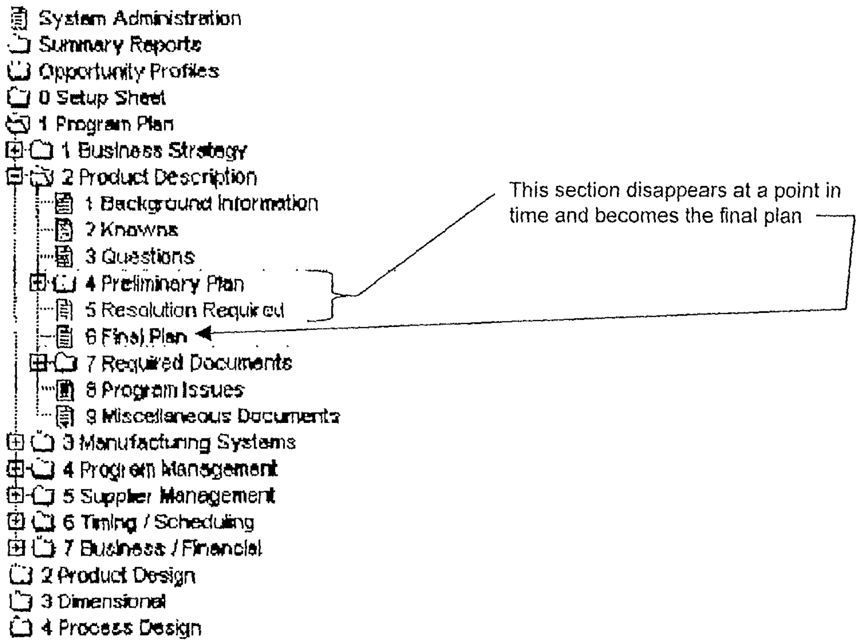
  - 7 Business / Financial
- 2 Product Design
- 3 Dimensional
- 4 Process Design

1.2.6 Final Plan



- System Administration
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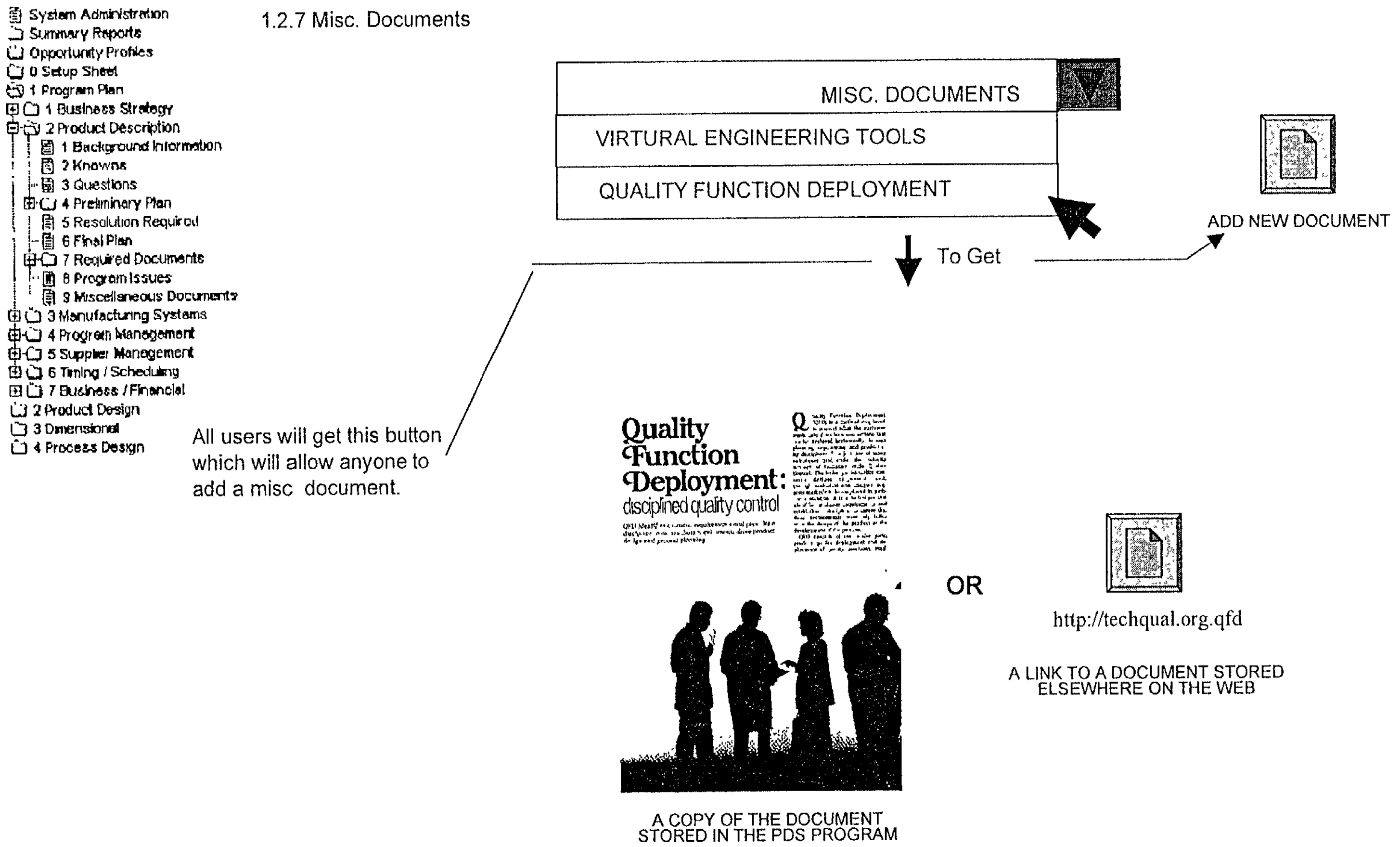
  - 7 Business / Financial
- 2 Product Design
- 3 Dimensional
- 4 Process Design

This section disappears at a point in time and becomes the final plan

FIG 31K


System Administration
Summary Reports
Opportunity Profiles
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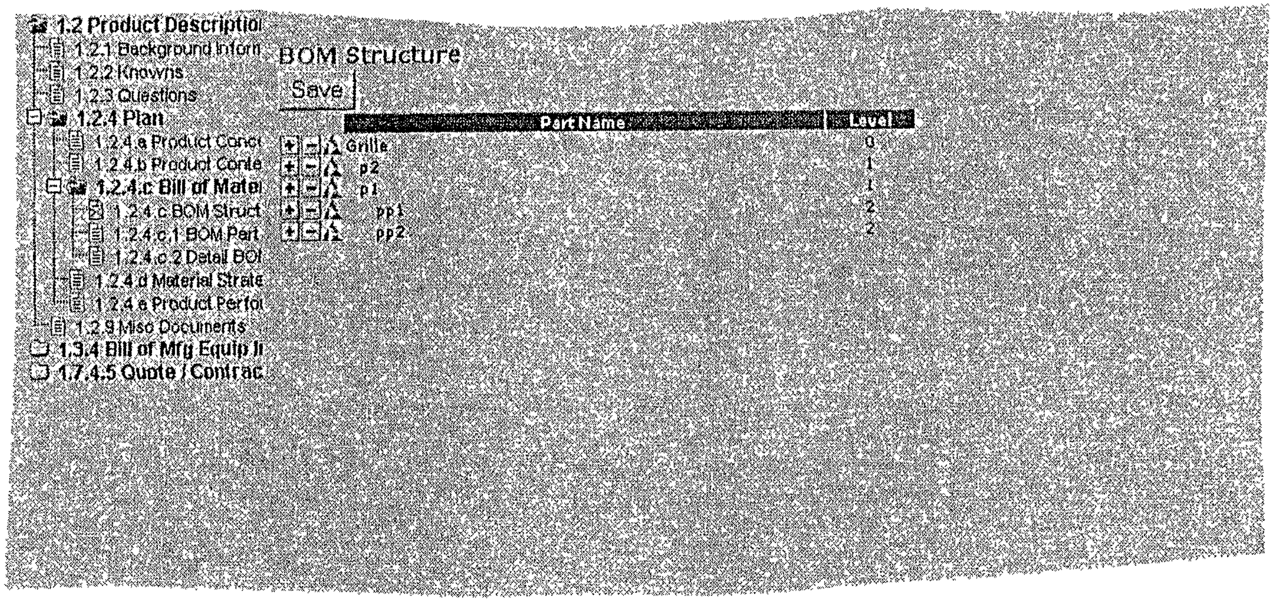
8 Program Issues
9 Miscellaneous Documents
3 Manufacturing Systems
4 Program Management
5 Supplier Management
6 Timing / Scheduling
7 Business / Financial
2 Product Design
3 Dimensional
4 Process Design
1.2.7 Misc. Documents
MISC. DOCUMENTS
VIRTURAL ENGINEERING TOOLS
QUALITY FUNCTION DEPLOYMENT
To Get
ADD NEW DOCUMENT
All users will get this button which will allow anyone to add a misc document.
Quality Function Deployment: disciplined quality control
OR
http://techqual.org.qfd
A LINK TO A DOCUMENT STORED ELSEWHERE ON THE WEB
A COPY OF THE DOCUMENT STORED IN THE PDS PROGRAM

Fig. 31L



BOM Structure

Part Name	Level
Grille	0
p2	1
p1	1
pp1	2
pp2	2

FIG. 32